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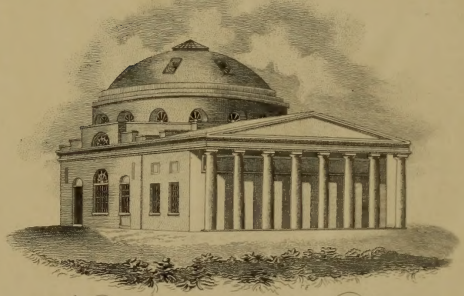

University of Maryland

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University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

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1- Dedication from Grant thesis in between pp 18+19 of Boyd Thesis
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Inaugural Dissertation

on

# Lateral Curvature of the Spine.

Respectfully submitted to the examination

of the

Hon. Honorable the Provost, Medical Faculty & Trustees

of the

University of Maryland.

for the

Degree of Doctor of Medicine.

by

John Harrod, of Baltimore.

1824

To

N. R. Smith M. D.

Professor of Surgery

in the

University of Maryland.

This Dissertation is most respectfully

inscribed by his much obliged pupil

John Harrod.

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# Dissertation
on the
Professor's Answer
to
Mr. Smith's 44th Letter.

John Mason.

Required, in common with my fellow candidates, in conformity to a law of the University, to present upon the examination for the degree of Doctor of Medicine, a dissertation or essay on some medical subject, I have with much diffidence, entered upon the execution of the task — diffident, knowing that from the limited period, at the present day, occupied in the preparation for the medical profession, it cannot be expected, that one can become so familiarize with the science, as to be enabled to present many original ideas, upon whatever subject he may select. A draught, therefore, more or less large, must be made upon the experience and productions of others — it is unavoidable. Should, therefore, in some instances, where there is correspondence of idea, a similarity of language be recognized, an exemption from the charge of plagiarism is hoped for, inasmuch, as on the threshold, I acknowledge my obligations to others.

To the student, there remains scarcely more, than to collate the opinions and practice of the best authors, with respect to the theme he attempts, and to deduce from them those conclusions, which the judgment shall dictate, most consonant with received principles of modern pathology

importance of an organ, from the priority of its appearance in the development of progressive organization. Were we thus to judge of the spinal marrow, its claims would be great, indeed, paramount to those of any other organ in the human system. Formed anteriorly to the great source of sense and reason, can we doubt, for a moment, of its rank in the scale of value! Anatomical research demonstrates the fact of its early existence in the embryo of the future individual. Acephalous monsters furnish evidence of as great dependence of life upon it, as upon the brain, the formerly considered sole source and fountain of life.

The acknowledged and obvious value of the spinal marrow to the human system, must render any deviation from its normal, healthy, condition, a subject of much interest to the practical physician. However affected by disease, its immediate restoration, or relief, becomes a matter of anxious endeavor to him — the more so in view of often-resulting deformity.

Hitherto, the means resorted to by physicians, having, in many cases, failed of success in the treatment of spinal disease, they have been considered, in a great measure, as incurable; and the unfortunate subjects of them abandoned, often, to their supposed unalterable fate. But,

happily for the profession, the cause of humanity and the wretched patient, greater attention has of later years been bestowed upon the subject; and improvements in its management, with greater success in treatment, than formerly, justify the physician, in giving hopes of permanent alleviation, if not of ultimate restoration. The neglect of the profession with regard to these affections, while other organs have received careful and industrious investigation, in their abnormal condition, has been attributed, by some, to the opinions formerly entertained in regard to the use of the spinal marrow, and of its supposed subordination to the brain. We may presume, that but slight reflection would have taught, that the spine constitutes an essential portion of the animal economy, and that from its derangements, arise a greater number of complicated sufferings, than from those of any other organ.

What has further contributed to this neglect, have been successful efforts of empirics, and in cases where the skill of the surgeon has been unavailing. Occasional success has gained for such a notoriety, which, in some places, has almost entirely diverted the management of spinal distortions from men, whose science and experience would not have permitted them to have lost any salutary suggestion of nature or art, in the prosecution of its treatment — this being a department

of practice, which is more than any other, in the province of the surgeon, who has been well educated in anatomy & pathology.

Amid the whole range of human maladies, none are more afflictive and distressing to relatives and friends, or more deplorable and grievous to the sufferers themselves, than are some cases of spinal distortion. Persons so affected, often become objects of neglect or aversion; and being rendered unfit to discharge properly the several duties of life, they remain burdens upon society. The restoration of such to health and vigor and the enjoyments of society, is the duty of the surgeon. How important and responsible the office! How godlike the successful efforts!

# Lateral Curvature &c.

The affection of which we presume to treat, is located, as its name implies, in the spinal column — the anatomical structure of which it will not be necessary to describe. There is, however, a condition of the spine in disease, that may be confounded with lateral curvature; but a slight attention to their distinctive characteristics, will enable one to determine, many definitely, the respective diseases.

The following are among the more prominent of the diagnostic symptoms

In lateral curvature; there is

1st. Absence of all the spinal symptoms, peculiar to the other affection; such as, rigidity of the muscles of the inferior extremities; awkwardness of gait; derangement of function in the thoracic or abdominal viscera — according to the location of the caries.

2d. The bending is not so abrupt.

3rd. The curvature is double, presenting a waved appearance of the spinous processes — or, what is technically

termed, a compensatory curve.

4th. The scapula is often drawn to one side, and also the shoulder, of the side of curvature, being more or less distorted.

5th. The muscles of the side opposite to that to which the curvature looks, are often in a flabby, shrunken, condition; while those on the other, are preternaturally developed — the latter resulting from the greater energy of vascular action on that side.

6th. Period of life in which they respectively occur.

Among the general causes inducing this affection, may be enumerated,

Softening of the bodies of the vertebræ
Morbid condition of ligaments & muscles
Undue action of muscles

Of the nature and operation of these causes, we will speak somewhat in detail.

Softening of the bodies of the vertebræ. This may arise from one of two causes — differing, in their effects, only in the time of life they generally appear — viz. rachitis and mollities ossium — a word or two respecting which it may not be amiss to offer.

Rachitis is an affection, wherein the nutritive function in the osseous and ligamentous systems, is im-

perfectly accomplished. These systems require more than any other, that their nutrition be quite perfect, in order to their full and complete development. Whenever, therefore, it becomes from any cause, impaired, these systems take on morbid action. Rachitis occurs mostly in children; and in them generally confined from the age of seven or eight months, to that of two years. In some rare cases, it is seen after this period — a little before puberty. It seems to consist in a want of due firmness in the bones, in consequence of a deficiency of earthy matter in their structure. The causes of rachitis are involved in great obscurity. The subjects of it being often at the same time scrofulous, is probably the only reason why scrofula is ranked among other causes.

Mollities ossium. This is an exceedingly uncommon affection; and its causes like those of rachitis are buried in obscurity. It occurs generally, about or beyond the middle period of life.

Mollities ossium differs from rachitis, from the circumstance, that the bones affected by it, may be at once bent in any direction, and also frequently admitting of being readily divided by the knife; while in rachitis they yield, and become distorted only by slow

degrees, and retain their natural inflexibility. It depends upon a morbid softness of the bones; these become preternaturally flexible, in consequence, either of the inordinate absorption of the earthy matter — the phosphate of lime — from which their natural solidity is derived, or else of this matter not being duly secreted into their texture. The bones affected become specifically lighter

Although not disposed to fracture, the vertebræ will yield, as do the long bones, in rachitis and mollities ossium. Having the tendency — occasioned by predisposition from other affections — thus to yield upon appropriate force, the vertebræ, in such patients, will give way under the superincumbent weight of the head, superior extremities and such portion of the trunk as may lie above the point where the vertebræ incline to give way — the mechanical pressure thus induced, being equivalent to the appropriate force. The spine being exercised while sitting, as well as in standing, in the sustentation of parts naturally attached to and dependent upon it — its relations to these parts not being at all changed, though the position may be altered — is thus constantly exposed to exciting causes

Morbid condition of ligaments and muscles. That ligaments will gradually waste from want of proper use, we have an instance in the anchylosed hip-joint; in which it capsular ligament, the strongest in the body, wastes, and becomes a web of membrane scarcely discernible. And that muscles will become shrunken in size, we have seen, in cases, where, from disease, an individual has been long confined to bed, and having thus been deprived of proper exercise, has had much diminution of muscular parts. The same result is exhibited, where, from fracture, an arm has been bandaged and kept for some time in a state of repose.

Undue action of muscles. This is produced from several causes; among them are, a twisting condition of body while sitting and engaged in some exercise, as in writing, drawing, playing on musical instruments &c. The confinement of persons for months together to one position &c. All these causes act with greater advantage, where there is a predisposition already existing, as weakness, or but slightly distorted condition of the spine. Muscles alone, however, without predisposing or other causes, having predominant action on

one side greater than on the other, may produce this effect.

There are other causes, but of more rare occurrence than those already enumerated; such as, wasting of the inferior extremities, or paralysis, &c; which we deem it not important to bring into view.

We next proceed to speak of the subjects of lateral curvature. It has been thought, that girls are far more obnoxious to this affection than boys. This opinion appears to be strengthened by many circumstances. First, the natural constitution of the female is ever weaker than that of the male, and consequently more liable to be affected by morbific causes. Secondly, females not varying the duties of the school, with that degree of exercise the boys partake of, they do not acquire, by this means, that strength and perfect development of the frame, enjoyed by the latter. Thirdly, the character of their education is somewhat different—that of the males requiring greater activity of mind, while there is often associated with it more or less of corporeal exertion.

Coexistent generally, with these causes, there may be found a disordered state of the digestive organs, which only gives greater efficiency to other causes.

Lateral curvature generally occurs about the age of puberty. Every one knows that at this period, great changes are wrought in the animal economy. In such as are predisposed to it, the bones remain soft, while other parts undergo their full development.

Treatment. This is an affection with which empiricism has had much to do. The credulity of those laboring under it, has permitted them to regard with confidence, the formidable representations of its character, and extravagant promises of cure, made by persons perfectly unacquainted with the mechanism of the spine, and its offices; while the anxiety and solicitude of friends, have caused them to yield consent to a trial of the boasted skill of bare-faced pretenders. Such have often made many and great sacrifices, in order to satisfy the exorbitant fees, and secure the secrecy of such impostors.

It is a disease of which we need not entertain much apprehension; especially if it occur after puberty. In its proper treatment, we may arrest its progress, and obviate deformity.

The first object of the surgeon, should be to

regard the primary source of the disease. The habits of the patient should be especially attended to, and corrected. If there shall have been errrs in diet, they should be amended - allowing wholesome and nutritious food, and in such quantity as the patient may ~~indulge~~ incline to indulge in, temperately; and requiring him to avoid all gross articles. If there be constipation, care should be taken to remove it and prevent its recurrence. The patient should take moderate degree of exercise - especially in the open air - This to be so directed, as that equal muscular action be exerted on both sides. If there be a preponderance of muscular development on one side, direct the exercise of the muscles on the opposite, while those on the side of the curvature are to be kept in repose - as by the employment of a sling. The exercise with the dumb bells may be recommended, care being taken that they be not too heavy. Swinging, by grasping a stick suspended from above, and thus running back and forth. Again, this exercise may be commenced as described, using both hands for a time, but, afterward, employing but one - that on the side of curvature. The patient may also be

instructed to carry a weight in the hand of the shrunk-en side.

Some of the means hitherto employed, in the treatment of lateral curvature, have been by frictions; thumping and shampooing; percussion; kneading; machines of various kinds, some of which are fixed to the body; carrying weights on the head &c. &c. As to machines, the objects generally to be attained by their application, are, to stretch the spine when curved, to keep it stretched, and to remove the cause of the distortion

Mr. Shaw, an eminent writer on spinal distortions, recommends the practice of carrying weights on the head. The object of their use, he urges, is to cause the equal exercise of the muscles of both sides, as is required in balancing the weight, and sustaining it, without permitting it to fall. Though Mr. Shaw has the credit of this practice, we find it spoken of and employed nearly a century before its revival by Mr. Shaw M. Andry, Professor and Dean of the Faculty of Paris, in a work, entitled "Orthopaedia," published in 1723. The following extract is taken from that work.

"But no despicable expedient to make a child

that is come the length of five or six years old hold the head straight; is to lay upon the fore-part of the head any thing that will easily fall off; such as a powder-horn, or the like, and desire him to walk so as not to let it fall off. This may be made a sort of play to him, which he should frequently repeat; and it will be proper to reward him when he does right, by way of encouragement. Thus you will soon see the child hold his head upright; but you must conceal your design from him, if possible, which will make it succeed the better. It will be proper to have several children engaged in the same pastime, to raise an emulation among them who shall do it best."

It would appear, however, that such management would only increase the deformity — by adding to the mechanical pressure already exercised by the weight of superior portions of the body. Those best acquainted with this affection, and its treatment, assure us, that no confidence can be placed in it. Indeed, one would suppose, that the very idea of its modus operandi would lead to its rejection in practice.

On the other hand, those practitioners who deprecate the employment of machines, in toto,

because of the inefficiency of such as they may have seen, we think, err in so doing. They admit the existence and operation of causes acting mechanically in the production of lateral curvature, and, therefore, we do not see the propriety of condemning the use of appropriate mechanical means, where recourse may be had, successfully, to such in its treatment.

As many varieties of machines have been invented and employed in cases of curvature, all having greater or less imperfection, it cannot be expected, that an individual description of them can be given. The most available of those we have any knowledge of, appears to be that proposed, and in use with Prof. Smith, of the Institution of which I aspire to be an alumnus.

This apparatus is a chair, which has no back, but has three high posts on either side - one at the anterior angle of the seat, another at the posterior, and the third at the middle. These are high enough to reach a foot above the head, when the patient sits. They are united to each other above by diagonal cross-pieces, of thin elastic wood, crossing

each ther in the centre. The apparatus is designed to enable the surgeon, to render the spine straight, partly by lateral pressure. A band is ~~placed~~ passed around the prominent shoulder, and has its two ends passed across the body before and behind, and fastened to the opposite posts. Another is applied to the neck, and carried in the same way to the opposite side. A third is applied to the hip of the same side, and secured in the same manner. These being tightly drawn, temporarily overcome the curvature. A band should also be applied to the chin and to the occiput, and secured to the cross-bars above the head. In this apparatus, the patient should sit for two or three hours during the day, and should repeat the sitting, daily, till some beneficial effect shall have been produced.

It is necessary, however, in the employment of any machine that may be prefered, that strict attention be had to the condition of the patient — The state of his general health, regularity condition of his bowels, fresh air, proper diet, due degree of exercise, &c

An

Inaugural dissertation

on

Hæmoptysis

Submitted to the consideration

of

Provost Trustees

and

Medical faculty

of the

University of Maryland

for

the degree

of

Doctor of Medicine

by

William T. Boyd

of

Maryland

March 1834

An

Inaugural dissertation

On

Haemoptysis

Haemoptysis, a spitting of blood from the respiratory passages. This word is derived from the Greek words) αἷμα and πτυω) The disease is characterized by the following symptoms, viz by coughing up florid or frothy blood preceded by heat and pain in the chest, irrita

=tion in the larynx; and a saltish taste in the mouth

It generally appears about the age of puberty, at which period the system is under=going great changes, and the reason this form of hæmorrhage does not occur before this period is evident from the change which take place about this time in the circulation. In child=hood the blood is directed more to the aortic circulation in order to produce that develop=ement which the animal frame requires The head being the largest organ at that period of life, and the one that acquires its develope=ment first. It therefore requires a greater supply of blood for its nutrient effects

Between fifteen and twenty years of age the stature of the body being generally comple=ted, the pulmonary and aortic circulation attain an equilebrium. The vessels of the lungs are more numerous, than of any part of the body of the same dimensions. These vessels of the largest size, as they arise directly from the heart, and at the same time very short, are more immediately subdivided into vessels of the smallest size, and these small vessels

ramifying on the internal surface of the bronchial cavities, are situated in loose cellular tissue and covered only by a thin and delicate membrane, so as to enable the blood to undergo that change which the act of respiration produces; so that considering how often they are engorged with blood, we may readily account why hemorrhage from them is the most frequent with the exception of the nose and particularly why any violent shock given to the body produces a rupture of them

Symptoms. This disease is generally preceded by a variety of symptoms: Namely, a sense of weight and oppression in the chest; a feeling of heaviness and lassitude in the extremities; a short dry and tickling cough; palpitation of the heart; deep and frequent sighing; a deep-seated burning or pungent pain under the sternum; slight creeping chills; difficult breathing; cold hands and feet; alternate paleness and flushing of the countenance; mental and corporeal irritability; a small, quick, frequent and corded and sometimes a wavelike pulse; and a disagreeable saltish taste in the mouth In some cases the hemorrhage comes on sudden

=ly without any of those premonitory Symtoms

A short time before the hæmorrhage makes its appearance, we observe all at once a great degree of dyspnea: the movements of the chest become accelerated and hurried, there is no longer order in their succession; the most striking irregularity accompanies them: they are unequal, intermittent, large and small by turns, as if convulsive: the patient in a state of suffocation, and his countenance is expressive of great distress.

In most instances those who have suffered once an attack of this disease, are subject to returns of it at irregular periods. It has been known to have returned periodically. Schrader mentions a case in which a considerable portion of blood was coughed up every morning for several days in succession not the least hæmorrhage having occurred during the rest of the day and Alexander Thompson relates a case in which a hæmorrhage from the lungs came on every third day for nearly a year. Cases in which the hæmorrhage occured monthly are related by a number of authors Viz Armatus Lucitanus

Schenk, Meyer, and Mead, and Richter mentions a case in which it occured every four weeks instead of the menstrual discharge - Blanchard saw a case in which the haemorrhage happen every three months in consequence of suppression of a haemorrhoidal discharge

Causes. Violent exertions such as running, jumping wrestling, singing loud or blowing on wind instruments; the intemperate use of stimulating drinks; a diminution of atmospheric pressure; irritating acting on the mucous membrane of the bronchiæ; by breathing air too highly rarefied to be able properly to expand the lungs; blows on the chest; violent mental excitement; intestinal irritation; metastasis of gout and rheumatism; obstructions of the liver and spleen; the suppression of habitual evacuations such as the the menstrual discharge &c; costiveness; repercussions of cutaneous eruptions; atmospheric visissitudes; organic affections of the lungs impeding the free circulation of blood through its vessels, particularly tubercles It is sometimes caused by the amputation of a limb or the taken up of a large artery;

external heat; plethora; weak vessels; cough; irregular living; certain portions of the body; cold externally applied and finally any thing which increases the circulation

Predisposition. The persons predisposed to this form of hemorrhage, are those of a sanguineous temperament, delicate and slender make. Persons in which there is is a faulty proportion either in the vessels of the lungs or the capacity of the chest, such as a narrow flattened and depressed chest; high prominent and square shoulders, a long and slender neck; blue eyes, a delicate and fair skin through which the superficial veins are easily seen; florid cheeks, a clear but not strong voice; white teeth; persons not capable of bearing much fatigue, but active, irritable and passionate, persons who subject to palpitations of the heart on slight emotions. Those who are predisposed to phthisis, specially of the tuberculous kind. M. Louis considers hæmoptysis as one of the most characteristic symptoms of phthisis. "In two thirds of the cases of phthisis pulmonalis," says M. Louis "the disease was preceded by hæmptysis. In one fifth of the number the accident happened before there was any cough or expectoration. In the whole nineteen hundred and sixty individuals there was

none who had spontaneous hæmorrhage from the lungs except the phthisical portion." From the number of cases of phthisis pulmonalis which a. L. Louis, has seen preceded by hæmoptysis he concludes that pulmonary hæmorrhage to any extent, is, in itself a very strong presumptive evidence that there are tubercles in the lungs. I am inclined to agree with the opinion advanced by a. L. Louis for in all the cases of spontaneous hæmoptysis, which have come under my observation have been in persons who were very evidently predisposed to phthisis or labouring under the disease at the time, with the exception of one case and that happened in a young lady about the age of sixteen. and owing to an irregularity in the menstrual discharge. Persons who are predisposed to hæmoptysis will generally have during childhood eruptions behind their ears and on their scalps and are liable to catarrhal affections on the slightest exposure to cold which terminate in copious expectoration.

Diagnosis. This disease is only liable to be confounded with one other disease and that is hæmatemesis. When vomiting accompanied the throwing out of blood from the mouth, as vomiting and coughing often exist together, it may be difficult to decide from what cavity the blood proceeds whether from the stomach or lungs

but we may decide generally by the blood brought up
Blood that comes from the stomach appears in larger quantity than when it proceeds from the lungs, the blood that flows from the lungs is of a florid colour and contains a large quantity of air mixed with it which renders it frothy: while that which comes from the stomach is coagulated and of a black appearance. the blood from the lungs is thin and mixed with mucous. that from the stomach thick and mixed with substances which had been taken into it at meals, the blood spit up from the lungs is thick and black sometimes nothing. however can be inferred from this circumstance, but that the blood has laid a longer or shorter time in the lungs. The blood sometimes proceeds from the mouth and fauces when it proceeds from the the fauces it is attended with hawking but no coughing. when from the mouth there is neither hawking or coughing —

Prognosis. In Hæmoptoe is not attended with cough when there is no symptom of phthisis accompanying it or there has been none preceding it, or when it does not leave behind cough or dyspnoea. This disease seldom proves fatal from the mere loss of blood, when it does the hemorrhage proceeds from a large vessel ruptured. The prognosis is always bad in those

persons who are predisposed to consumption and in those persons the quantity of blood thrown up is generally small and mixed with mucous This disease sometimes occurs without any bad consequences whatever, and it is most likely to be the case when the hæmorrhage is sudden and copious, than when it is in small quantity and mixed with mucous When this disease occurs in females during or from the suppression of the catamenia, there is generally very little danger, without she is predisposed to phthisis or labouring under it at the time. Hæmoptysis arising from bodily exertion such as lifting; throwing; running; jumping &c loud singing or speaking; blowing wind instruments; over distention of the stomach; stimulating drinks; or any other cause that will produce strong vesicular congestion in the lungs or strong arterial excitement, is less dangerous, than when the hæmorrhage occurs spontaneously, for the persons may then be considered as predisposed or ~~to~~ labouring under phthisis. It is always to be considered a serious disease when connected with a scrofulous or phthisical predisposition — — — —

Post mortem examination. The appearance of the lungs when this disease proves fatal in consequence of the rupture of large vessels are easily described - There is always a large quantity of blood coagulated in the lungs and a manifest inflammatory disposition in the coats of the ruptured artery. The blood generally insinuating itself in the ramifications of the bronchiae and filling them up, thereby producing death more from the want of respiration than from the loss of blood. When connected with phthisis. we have all the appearances which take place in the different forms of phthisis -

Auscultation "The heart generally remains as sonorous as before the attacks, but the respiratory murmer is either absent or feeble. The crepitation is heard in more or less numerous points and particularly when the respiratory murmer is absent. The spaces between these points still present a perfect and even puerile respiratory murmer. At the end of a longer or shorter time it ceases; and an abundant mucous rattle succeeds indicating a copious exhalation of blood in the air cells and bronchiae; occupying very soon the lobe or affected lung" Dr Fingerson strongly recommends

the employment of the of stethoscope in all cases, where there is bloody expectoration. For in some cases of hemoptysis there is little or no blood expectorated, and the patient may be bleeding internally all the time, and suddenly die of suffocation Dr Fergerson gives a case, in which the patient had spit no blood for fourteen hours before his death, this case he did not examine with his stethoscope, and on dissection, there was found in his left pleura three pounds of blood. He says in this case "had I examined I should have altered the treatment and perhaps saved the life of the patient." I can say nothing in favour or against the use of the stethoscope as I have never had any experience with it, and it requires a great deal of practice, before you can judge by it with accuracy. But from the recommendation of Laennec and numerous others writers, I have no doubt of its being of great advantage in forming our diagnosis of the diseases of the chest. Having now finished what I have to say, of causes; symptoms prognosis, diagnosis, auscultation and post mortem examination. I next proceed to the treatment of this disease

Treatment In speaking of the treatment of this disease, it is necessary to mention that it occurs in two different states of the system; one attended with an inflammatory state of the systems, the other with debility: and as the treatment must be different in those cases, it will be highly proper to pay particular attention to those different states, On being called to a patient labouring under haemoptysis; if he has a strong, full and hard or a tense and contracted pulse it will be necessary to bleed, but if the haemorhage has continued for some time before you have seen the case, and the patient has become weakened from the excessive loss of blood, with a small frequent and feeble pulse, or the patient has been in a debilitated state previous to the occurance of the haemorrhage we should not bleed. By bleeding when the pulse is active, we lessen the momentum as well as the quantity of the circulation fluid, and give those bleeding vessels time to contract. There is also a tendency to the formation of a coagulum. from the action of the heart being diminished We also lessen the cough, Bloodletting has been and still recommended and practiced by all

physicians in that state of the system which I have mentioned Dr Chyne recommends small and repeated bleedings in that kind of haemoptysis, which assumes the form of inflammatory fever, which generally runs its course in three weeks and terminates in phthisis, in such cases he directs blood to be taken to the amount of six ounces every six or seven days; he mentions a case in which the patient had the disease for twenty years and was finally cured by this mode of practice This remedy is used both to stop the bleeding prevent its return

I come now to speak of those remedies which are given internally in this disease. The chloride of sodium has been very extensively used in this disease, in domestic practice and highly recommended by some writers on this subject. That it is beneficial I have no doubt, although its efficacy has been denied by some. In what manner it produces its effects I am not prepared to say; But I presume its is owing to the cold which it produces (in common with neutral salts) when passing from a solid to a fluid state. The best medicine and the one most strongly recommended, is the

nitrate of potassa. It is strongly recommended by Selle and Richter, It was given by Dickson Gibbon and Hartman with the most beneficial results, It is also a very popular medicine with the Italian physicians and Dr Eberle says "not more than it deserves" according to my experience" Recamier is a strenuous advocate for the use of this medicine, and has to the profession, some very interesting cases, in which the bleeding was promptly arrested by it. He gave half an ounce of nitre dissolved in barley water or mucilaginous fluid in the course of twenty four hours: but he says he has given the same quantity of nitre in four hours, by which the urine was very much increased and some little disagreeable sensation produced in stomach and mouth, but no other ill effects, I would not be disposed to give so large a quantity of this medicine, as has been done by Recamier; owing to the strong tendency, which the nitrate of potash has to produce gastro-intestinal irritation. I have at this a boy about thirteen years of age, who ruptured a large vessel in his lungs. this boy lost about two pounds of blood in less than five

minutes, yet the bleeding has been prevented from returning by the use of a solution of the nitrate of Potass. This substance is frequently used in combination with the sulphate of magnesia, and with very beneficial effects. But in this case the good effects cannot depend on the nitrate of potass because according to the known laws of Chemistry, the nitrate of potass is decomposed; consequently it must be owing to the new salt which is generated, and that is the sulphate of potass. From the good effects of the nitrate of potass which I have seen produced, I am inclined to think it is the best medicine that can be given in hemoptysis attended with a plethoric state of the system. In all cases the patient should be kept perfectly quiet and his bowels kept soluble by means of mild purgatives or enemeta.

There have been a great variety of Astringents used in this disease, such as the sulphate of alumina, the Sulphas Ferri sulphas Cupri, sulphuric acid, Kino &c. But of all the astringent substances the acetate of Lead stands highest with the most eminent physicians. It is given in doses of from one to five grains every half hour or at longer intervals, as the case may be. Dr. Eberle says "it appears to be equally applicable in cases attended with an active or debilitated state of the circulation" it is likewise recommended by Munroe, Hill and Reynolds, it is sometimes given in com-

bination with calomel and opium with the happiest effects. Dr. Eberle gives it in combination with calomel when the diathesis is phlogistic. Richter, Meza and Barton recommended it in combination with Ipecacuanha and Dr. Barton says "in combination with opium and ipecacuanha seldom have I been disappointed in my expectations of benefit from this medicine, which of all the articles of the Materia Medica seems to me to possess the greatest command over the arterial system". Some Physicians have been deterred from the use of this medicine from the mistaken ideas that it was very apt to cause violent colic. Now this has been proved to be erroneous, on the other hand this is seldom or never the case, for the acetate is less apt than any other preparation of lead, to act injuriously on the human system. Emetics have been employed in this disease by Bryan Robinson. Dr. Eberle says that when there is pulmonary congestion with a difficult action of the cutaneous capillaries, they will be likely to prove serviceable. In any case I should not like to use them, but those substances given in nauseating doses in combination with nitrate of potash so as to keep up a continued nausea may be of infinite service provided they are not pushed too far, so as to cause vomiting for in that case the good effect produced by nausea would be more than counterbalanced by the injurious consequences arising from vomiting. For in the act of vomiting the

compression of the abdominal muscles and diaphram on the decending aorta, will determine a greater quantity of blood to the lungs; and consequently a liability to a reopening of the ruptured vessel. Cullen was induced to try it in one case, but the effects were so bad, that he never had recourse to it again. They are very seldom now used. As it regards the other astringents, which I have mentioned, they are used only in that variety of hæmorrhage, which occurs in a debilitated state of the constitution and known by the name of passive. Purgatives are of great service in the inflammatory variety of this disease, called active, as depleting agents, and the best we can have recourse to, is the neutral salts but in all cases it is necessary to keep the bowels open by the use of mild purgatives or enemata

In spasmodic and nervous cases, Harles, Stork, Richter, Plater, and others recommend Hyoscyamus. The powdered capsicum is recommended in these cases also by Dr Eberle and Minor

Where the disease has assumed a chronic character, and is attended with an irritable pulse, digitalis has been very much used and with great benifit to the patient, the system should be kept

under its influence for ten or twelve day in order to have the good effects of the medicine. The exhibition of this medicine requires attention both on the part of physician and nurse, as it is very apt to produce very disagreeable symtoms

Counter-irritants are of great advantage in this disease, after the action of the heart has been reduced, but more especially in the chronic form of this disease. Blisters and sinapisms applied so as to keep up a constant irritation without vesication are of great advantage. But the best counter irritant we have is the tartar emetic ointment, I have seen it used in this disease, as well as other diseases with the most satisfactory results, and therefore can speak from experience, and I am very glad to find this substance coming more and more into use every day

If the disease should come on in consequence of the suppression of hemorrhoids, we should have recourse to those agents which have a tendency to restore the accustomed discharge, such as small doses of aloes and the application of leeches to the anus, together with such other remedies as the system may require — If the patient should be troubled much from a cough we should

To

C. Geddings M.D.

Professor of Anatomy and Physiology in the University of Maryland &c &c

This inaugural dissertation on Gastritis is dedicated; under whose guidance I have conducted my medical studies from the moment of their commencement - And although I feel this feeble effort is not worthy of being dedicated to one whose medical research, scientific acquirements, and profound erudition, has deservedly placed him so high on the roll among America's brightest gems. Still trusting to the kindness you have ever shown me, to the indulgence with which you have

always over looked my professional errors and assured by these marks of your friendship, I have ventured to dedicate this thesis to you — And let me now in conclusion express to you my sincere thanks for your kindness and my happiness and satisfaction from the instruction I have received from you —

Respectfully your friend
and pupil the
Author

use demulcents articles in co[illegible]ation with opium and camphor so as to allay the i[illegible]tation in the mucous membrane of the bronchia Dr Eberle says "where the cough is violent and spasmodic and the pulse contracted and small, with a dry skin; small doses of camphor and Ipecacuana with mucilagenous drinks often procure great and speedy relief. ~~where~~

Where it arises from ~~metastasis~~ of gout or rheumatism we should endeavour to restore the disease to the part or parts from which it proceeded. If it arises from the suppression of the menses, we may resort to the use of emmenagogues, together with other means, such as bloodletting, blisters to the sacrum, riding on horseback the hip bath in order to restore the secretion

If the patient complains of cold feet, we should sinapisms on the warm pediluviums or by the application of substances to his feet In all cases the drinks should be cold and ice has used with great success The patient should live on a very low diet ~~and~~ avoid all violent mental and bodily exertion

To the Provost Trustees and Medical Faculty of the University of Maryland, this inaugural thesis is most respectfully submitted.

1834 Jos Flint M.

"Nihil dictum, quod non dictum prius.—

Fellows Dewees.—

# Yellow Fever

Id. quod, dictum est, non est mei
Sed quod, collectum est, est optimi –

This disease is well known under its present appellation, though I am induced to assert, it seemingly, manifests ignorance, for any individual to name a disease from a symptom which is only incidental –

The variety of names we find, that have been given to distinguish this fever, I deem in this essay unnecessary to insert, because I conceive none will throw more light than the present, Yet as I have before intimated – the Yellow appearance of the skin may or may not occur, However the fever is of the malignant remittent form that which I am about to treat of, under the epithet of Yellow –

In the year sixteen hundred and forty seven, it is said, the disease first made its appearance, and was first observed in the Island of Barbadoes, thence spread itself as they supposed by contagion, to all the adjacent Islands No time had scarcely elapsed before a fever of the same form, was making rapid progress, along the coasts of North America, Boston, New York, Philadelphia, Baltimore, and the principal cities &c, to the first cited city it was supposed to have been brought by Admiral Wheeler from the Island Martinique –

In the year seventeen hundred and ninety three it made its ravages in Europe, One writer asserts there has been a new era in the prevalence of this disease, in the Sea port towns of the United States, the scenes

that occured in the city of Philadelphia, need not be portrayed, they are too green in the memory of those who did escape and are now living witnesses, ever to be obliterated, but with the Vital Spark:- Dismay and consternation seized on every soul, Every head was confounded, every heart was appalled, and every arm was paralyzed, whilst Death and destruction seemed triumphantly, hand in hand, to strut the streets at noon day, Its origin is beautifully illustrated and happily displayed by the Poet,

"The rivers die into offensive pools
And charged with putrid verdure, breathe a gross
And Mortal Nuisance into all the air."

Then the Etiology, is simply that the vegetable matter being decomposed Malaria is generated, which when received into the lungs, is said to produce the disease- some will contend that it is equally produced by animal decomposition- As heat, moisture, and vegetable matter are the three indispensable agents to produce miasmata, it will then be obvious that the disease most frequently occurs in the summer and Autumn when inundating rains are followed by continual scorching suns- It has been ascertained by many writers to be contagious, And they say that when the miasma is received into the system, and the disease becomes once established, it is capable of giving off the same effluvia, which the system is loaded with, completely elaborated as it is disengaged and thus communicating the disease, were it ascertained or admitted to be true, that the system passed off the same effluvia as it received to produce the fever, this would undoubtedly be an incontrovertible fact, that the atmosphere would become infectious. But in opposition to the

doctrines of contagion so ably supported by Sir Gilbert Blane, may it not be urged as a strong proof, that as contagious diseases arise specifically and only have its full effect but once: Now the Yellow Fever has been untruthed in some individuals more than once or even twice. One Author gives us an account of a certain person, who had the braveness as he termed it, to wear for twenty four hours, the suit of a soldier, drenched with his own perspiration, and who had been labouring under the disease in its worst form, he also further suffered himself to be inoculated in both arms with the Yellow Matter that issued from his suppurating blisters, he afterwards went into the bed of another patient who had just died of the Yellow Fever, while it was filthy with excrement, wore at the same time his shirt soaked through with black sweat and vomit, and himself slept soundly, sweated through a good part of six hours and a half, which he dedicated to this detestable trial, he exhibited several other feats of this kind and crowned the whole by drinking about two ounces of the vomit discharged from or taken out of the dead mans stomach, and nevertheless escaped with impunity, How many hundreds have visited patients sick with the Yellow Fever walked through and trough their wards and even their attendants escaped and had not the disease. What I have said I presume to be sufficient (because they are well authenticated) to explode at once the entertained idea of its contaminating influence.

The symptoms are as follows, when persons are attacked they most frequently complain of sick stomach, giddiness, faintings. these symptoms sometimes followed by a chill with complete rigors, languor,

the eyes are observed to have a singular glassy appearance, red, suffused, protruding; attended with exceedingly severe pains at the optic nerves, the head ache is excruciating and is rarely intermittent. The Patient is said sometimes when attacked, to fall down instantaneously, as though panic struck, with depression of nervous energy, at other times they may be attacked walking in the street, with spitting black vomit which very soon carries off the patient. The second stage of this Fever sometimes inspires the sufferer with hopes of recovery, for it is attended by a partial abatement of all the symptoms, the vomiting still continues. Yet the patient feels greatly relieved, the pulse becomes more soft and natural the skin also changes its morbid appearance somewhat, the vomiting does not cease entirely, the thirst is stiable, the great desire for cold drinks are no sooner taken into the stomach than they are instantaneously ejected, the white of the eyes, is said to look muddy, arising probably from the coats of the eyes being diminished in whiteness by the same influence of the blood vessels, that causes the same dead clay colour to the whole body when in a more advanced stage, which generally in that stage the patient is carried in a runway to his long home, the pulse is deceitfully slow, the tongue assume the appearance of cream coloured velvet, covered by a viscid humour and continues so till death. Yet sometimes assuming an appearance resembling raw beef, in the last stage the urine diminished, soreness often in the Oesophagus, violent pains in the epigastric region, stomach irritable, pain in the loins, matter of black colour ejected from the stomach,

and evacuated from the intestines, and is said to resemble in colour and general appearance coffee grounds, I shall have occasion in an other part of this essay to offer some remarks on the nature of black vomit, there are three symptoms, in the diagnosis which may be taken into consideration, and which are most commonly believed to identify the disease, (I E) The red eye, Yellow surface and Black Vomit—

Even from an early period there has been observed Petechia, hiccup, Hamorhages and these symptoms in the prognosis are not always fatal, but when the tonge is red like raw beef, suppression of urine, with dark dejections of a tarry appearance, black vomit, ulcerated sore throat, acrid burning sensation experienced at the scrobiculus cordis, a low muttering delirium, all these symptoms indicate extreme danger— hamorhage from the nose sometimes occur and relieve that distressing head ache which is characteristic of the disease— there are also hamorhages from the liver, intestines, ears, gums, fan=ces, and also from the roots of the hair, This fever usually runs its course from five to seven days, and if the patients survive the sixth day without suppression of Urine, and the black vomit does not oc=cur it is probable he will recover but even then he may be attacked with symtoms strongly indicating Typhus Fever— relapse may be very easily brought on by a convalescent, even taking a glass of wine with friends unguardedly when they congratulate them on their convales=cence, Post Mortem examinations it is said throw but little as res=pects the pathology of Yellow Fever, however the stomach indicates

inflammation of its mucous membrane, some have found the liver of an ash colour, with its membranes very much thickened and strongly injected, abraded, and in many parts gangrenous or totally disorganized & of the consistence, and colour of rotten bark or frequently full of abscesses, another writer states that he rarely found it much diseased, but the stomach always inflamed and in parts gangrenous, sometimes the nerves, ganglia, and the investing membranes, particularly the semilunar ganglia, coliac and solar plexuses are of a scarlet and dark colour, the Psoas, and Iliacus internus muscles were flaccid dark and easily torn. The Pia Mater and the brain frequently inflamed, the cerebral veins are found in the state of turgescence and occasionally an effusion of a sanguinolent serum is discovered at the base of the brain and along the spine, an abscess has been found in the brain, When the Liver is affected, the concave surface inflamed, the gall bladder is then generally distended with dark and viscid bile, or a substance resembling nearly glutenous there is no bile found in the stomach or intestines, neither is there any discharged during the fever from either, yet there is a stage of this fever in which there is a discharge, which may have been supposed to be vitiated bile from the stomach and intestines, And I am told it bears no resemblance to any, possible shade or variety of bile, it is usually termed Black Vomit and is not bile, Immense quantities of this fluid have been thrown off, which I conceive it impossible for the liver to have ever effected, it is found extravasated between the coats of the stomach and also in the cavity of the abdomen, when it is very evident

no bile is ever found, It has been imagined by some Pathologists that the matter termed Black Vomit, was a secretion peculiar to a specific mode of the Morbid action in the Stomach, and intestines, Others (more correctly (perhaps) have supposed it to be dispolved blood with the gastric juices extravasated into the stomach and there becomes blended, in consequence of the vessels of the inflamed liver, and sometimes of the spleen and Stomach being in a high state of engorgement, they give way and repeated tides of dark granulated greens is forced into the stomach and is immediately ejected, some have supposed that there was a new power conferred on the parts by the disease, to secrete this unusual fluids To distinguish black Vomit and bile, may be done simply thus. if you place bile on a piece of white paper and expose it to the sun rays, and also some of the black vomit on another piece similarly exposed then the differences will be very obvious - now then if it be bile there will invariably be a colour, Characteristic of bile, Yellow, But if it be blood there will be a dark brown colour or a colour very distinguishable - In the Island of Dominica - Mr. Willian Lyon, gave his attention for some time to the careful investigation of the Black Vomit, and its Nature, and they appear to be very satisfactory, in identity of it being altered blood and not vitiated bile, the black colouring matter of this fluid was easily seperated by filtration, and its evident powerful acid qualities were proved by its action on the enamel of the patients teeth, by its accident smell, but above all by its effervescence with Alkalies - But further it is a well known fact, that

muriatic acid is constantly secreted from the skin, with the insensible perspiration, and this acid also is the principle we ascertained to be secreted in the morbid conditions of the stomach which being mixed with the blood, is nothing more or less than the black Vomit - he made the experiment to substantiate what was just asserted (blood & acid) by adding to blood muriatic acid the colour of the blood was instantaneously altered to a deep black, and when diluted with water presented a fluid which any one would have declared from mere inspection to be that fluid termed black Vomit, these facts seem very satisfactory and if it be true that it is the same, there will be an additional agreement of the fatality of urging that the black Vomit predicates the contagious nature of Yellow Fever. nothing more relative to the vomit at present presents itself worthy of observation. I shall next endeavour to offer some things respecting that Yellow hue which the surface of the body of the patient is said to assume, it is accounted for thus, say one writer, that the functions of the hepatic system together with some other viscera become suspended, leaving the bile in the blood and consequently tinging the skin by afterwards being secreted into the subcuticular tissues: this doctrine is objected to because it is said no bile, has ever been detected in the blood, by all the chemical tests, and it is further stated that it is not probable that such an irritating fluid as bile would be taken up by the extremities of the absorbent vessels, but that it is plausible they may absorb the serum and colouring matter alone, leaving the acrid and irritating matter in the Liver,

another author is of the opinion and expresses himself thus, it is owing to the peculiar state of irritation of the chylopoetic viscera causing a sympathetic action of the capillary system, whereby the secretion of the blood, in passing through undergoes that change which is necessary to give the peculiar tinge to the skin —

Some say that bile is absorbed from the intestinal canal without hepatic derangement, Sir Gilbert Blane a very able and learned man has given to the world the idea and supposes it to be owing to the depraved state of the red globules of the blood, for when it is drawn from the arm it seperates imperfectly afterwards being exposed to the atmosphere, its appearance is scarcely ever buffy neither is it of that florid red colour which is natural, it leaves a red sediment, and is not sizy — The patient in this disease is frequently carried off in twelve or fourteen hours, sometimes there is a livid appearance over the surface, and is supposed that the violence so suddenly committed on the Liver, that its proper function is instantaneously suspended, and instead of an excessive emulgence of high tinted bile, a chlorotic secretion takes place, which being forced into the sanguineous system, gives the ghastly lividity to the skin or entire surface —

In the next place I shall endeavour to account the remedies that have been employed and those which have been found to be the most beneficial, As this disease was so imperfectly understood, and not until of late periods the Yellow Fever had any known remedies to arrest its progress in seventeen hundred and ninety three

as before mentioned, it was not baffled by any artificial means the second state being attended by such alarming and debilitating symptoms, the Idea of blood letting made them shudder, yet that intense pain in the head &c naturally indicated the abstraction of blood, notwithstanding they gave tonics, expecting to subdue the disease, but on the contrary the disease achieved its own triumph and subdued the patient. Dr. Rush supposed the inflammatory diathesis was solely to be regarded as the cause of the danger, and consequently had recourse to the lancet to subdue the modern Catalina, which had slain its thousands. he continued blood letting, using at the same time large doses of Calomel and jalap, not at all daunted by the slowness of the pulse, nor any change whatsoever the blood might assume he still pursued his plan But since that time the abstraction of blood is resorted to on quite a different hypothesis – Dr. Rush it is said scarcely ever took from a patient more than sixteen ounces and gave ten or fifteen grains of Calomel and jalap – the Practice of the present day demonstrates to us, to abstract at once as much blood, as to make an obvious impression on the system, and then Administer Calomel in twenty or thirty grain doses and endeavour to salivate by continuing the remedies – It is recommended to take blood when the patient is in the erect position so as to subdue the sensorial excitement by bleeding to syncope. Some authors are of the opinion that Emetics are essentially useful at the commencement of the disease as they prepare the System for venasection, and in Administering

the Tartarized Antimony it shortens the oppression of the first stage and converts a disease of the malignant form into a mild one —

But may it not be laid down and urged that if Administered whilst there is instability of the stomach, that they are not only useless but prejudicial, how if the stomach be instable you may expect much congestion, and if a sympiesm be applied, it will afford infinite relief and act almost as a charm, in the commencement of the disease, there is always for the most part more or less sickness of the stomach, for which lime water and milk, the Carbonate of Potash with some acid to be taken in the state of effervescence bear in mind, no laudanum can be given in this fever nor stimulants of any kind, have a place as remedies as convalescents have frequently brought on a relapse by drinking a social glass of wine, the very coffee itself should be diluted with milk, ponado, mulled cider, wine whey &c should not be administered but strictly forbidd —

After copious blood letting and the Administration of Calomel it is recommended to use magnesia, Sulphate of Soda, as the effects of Calomel are slow to produce catharsis —

When Hamorhages occur from the fauces astringents must be used and those which have been found most useful, are the decoction of red oak bark in combination with a strong solution of Alumn.

When speaking of black Vomit I should remark, A Gentleman in this city not long since spit up and vomited in large quantities a fluid resembling to all intents and purposes the Black Vomit —

He was relieved by blood letting and the use of cooling effervescent draughts. In one case of Yellow Fever in which the Black Vomit was ejected as genuine as ever was seen, the patient took the Nitrate of Silver in large doses in combination with opium, these remedies were Administered immediately after blood letting for the purpose of giving tone to the stomach. But since muriatic acid dissolves blood as the experiment was made by the same hand that prescribed the Nitrate of Silver, that this was a fact, the patient recovered, without any other remedies, this case is related by himself and published in one of the Medical journals of the United States. Nitras Argenti was also supposed to have acted beneficially, by decomposing the Muriatic Acid that is secreted in the morbid conditions of the Stomach, I will now briefly recapitulate the most effectual remedies in the cure of Yellow Fever, as the disease is highly inflammatory the antiphlogistic regimen must be strictly adhered to therefore commence blood letting in large quantities, and give Hyd. Sub. Mur. in doses from twenty to thirty grains followed by some of the Neutral Salts Epsom, Glauber, or the Seidletz powders, the best diaphoretics in this fever are spiritus mendereri and the Carbonates Potapae. they produce diaphoresis commencing at the extremities what I have never witnessed from any other diaphoretics and consequently have the decided advantage. As the pain in the head in the first stage is so intense cold applications may be employed with good effect, when the Black Vomit is ejected the patient sinks rapidly Synapisms

the pericardium cordis become necessary. Pedeluvia also may
e used, I will conclude by observing that when Calomel shall have
en given and the bowels evacuated it should be continued until
t excites the Salivary Glands

To

The Provost, Trustees, and Medical Faculty, of the University of Maryland; This an augural Thesis is respectfully Submitted, for the degree of Doctor of Medicine, by

Michael J. Stone

March A.D 1834

# Remarks on Emetism or Vomiting.

Together with its manner of occurrence or Causation; - And on Emetics, or the articles which cause Vomiting, their mode of action, with their use, and effects as remedial Agents

The act of Vomiting, so familiar to our observation, is not in reality so simple a process as would at first appear, and has given rise to much speculation and many experiments - in order to discover, and explain its precise manner of inducement and performance. Some eminent Physiologists have asserted and even pretend to have ascertained by experiments on living animals, that in the act of Vomiting the Stomach is wholly passive, and that its contents are ejected (or rather pressed out) by the conjoint action of the Diaphragm and abdominal Muscles, and that Vomiting is thus effected more or less suddenly and forcibly, by the more or less quick and powerful contraction of those expulsive forces —

Other Physiologists equally credible, and not

less enlightened. have contended on the other hand, that Vomiting is not solely, - nor even perhaps mainly, the effect of mere pressure exerted on the Stomach by the surrounding muscles; - But in fact the result of an action performed by the Stomach itself, and that it is chiefly by a contractile power inherent in its own textures, that the Stomach throws out its contents in the acts of Vomiting -

The advocates of the latter opinion admit (what indeed is almost self evident) that the abdominal muscles and Diaphragm concur in and greatly contribute to the full or complete performance of the acts by which the Stomach ejects its contents. But they still agree, that a peculiar excitement, and a particular action, of the Stomach itself are indispensible to the effectual operation of those concurring powers.

It would appear indeed, that but for a State of the Stomach very different from its ordinary quiet, or a merely passive condition, a State in fact of peculiar preparation, or predisposition for the act of Vomiting, - the action, or compression, of the surrounding forces, would tend rather to

prevent, than promote, the ejection of its contents.—

Simple pressure (as in the latter case. or a passive state of the Stomach) might in some degree reduce the Bulk of the Stomach – if distended – or alter its form; – But it would seem equally probable, that such a Manner of Compression, might as well obstruct, as favour, – the escape of its contents, Or if the latter were thus mechanically squeezed out, it seems probble. they would be discharged by the inferior, as readily as upward through the Superior, orifice of that Organ, – And if Pressure by the Surrounding Muscles alone, were admitted to be the final or efficient cause of expelling the contents of the Stomach, when it was full, or distended, How are we to suppose such pressure capable of producing continued acts of Vomiting, – and efforts to Vomit – in those cases in which the organ is void of every thing but its own Secretions. (yet continually renews its efforts at expulsion. – This circumstance, of very common occurrence is certainly not favourable to the idea of a purely passive state of the Stomach in the acts of Vomiting, –

Whatever be the peculiar mechanism, or train of action by which the Stomach effects, or at least, aids, the expulsion of its contents, there would appear to be beyond all doubt, a State both of excitement and action, in the organ itself, whereby the inducement to the act, and the act itself, are mainly determined, while the action of the Diaphragm and abdominal muscles, however efficient, or conducive to the performance of the act of vomiting, would seem to be only secondary, or concurrent. The State of the Stomach which leads on to emesis, invites, or involves a correspondent or associated action in the part of the muscles in question, in this respect there exists an apparent analogy of State and action, between the Stomach during vomiting, and the Uterus when the latter is engaged in the act of parturience. Though the abdominal muscles greatly aid in the expulsion of the Child, they act in accordance with a prior excitement of the Uterus, Uterus itself, and it can never be said with truth, that it is by their action solely, Delivery is accomplished —

In what particular manner emetic

agents primarily influence the Stomach, so as to prepare or predispose it to the acts of Vomiting; or in other words, what is the exact nature or kind of the first impression, made by such agents on this Organ, is a question of difficult solution.-

Whether the first impression of an Emetic Substance on the Stomach, consists in an increase, or diminution of excitement in that Organ, admits a doubt which we have no means of solving. The evidence derived from observation, and feeling would seem appear to favour the idea, that by the first impression of many Emetic agents, the excitement of the Stomach is actually diminished. The first sensations experienced from the action of Emetic Substances on the Stomach, are, a sense of Failing, or sinking - a kind of Collapse - in the Organ itself, and this is attended by correspondent signs of weakness, or impaired vital power, in the nervous and vascular Systems generally, as giddiness, tremors, paleness, enfeebled pulse &c - But to those signs of universal depression, quickly succeeds, renewed energy, and powerful contractile action, in the Stomach itself, as well as in all the muscles asso-

- ated with it in the action of vomiting; - new excitement of the nervous and vascular systems is restored at the same time, and vigorous reaction, every where succeeds (during the exertion of vomiting) to the preceding stage of collapse, or languor.

The contrast thus suddenly manifested under the actions of emetic agents, leaves it uncertain whether we are to regard the effects, which take place in the second stage of impression, as the proper results of an excitant agency by the substance exhibited - or a kind of irregular or convulsive action, referable to the sudden depression of power or the offence, or shock, inflicted on the organic instinct or sensibility of the stomach, and imparted through the relations of that organ to the brain, the nervous, muscular and vascular systems -

Whatever be the primary impression of emetic agents on the vital attributes and actions of the stomach, - the final effect is manifestly a state of gastric excitement, and the result is substantially the same, whether it be brought about directly, or indirectly, primarily, or secondarily. Yet the original question must remain unsettled

As we have no means of learning whether the Vitalism of the Stomach is in the first instance exalted or lowered, whether it becomes paler or redder, by less or greater excitation of its own nerves and Blood-vessels, under the first impression of emetick agents -

The question is at any rate, more curious than useful, and its decision, involves no important practical issue

Another Question, connected with the operation of emetics is also suggested by the phenomena of vomiting, and merits consideration, as tending to illustrate the Kind and order of vital relations, or the physiological laws of Association, subsisting among the principle organs, or Systems of the Animal Oeconomy - the question, I refer to is, Whether vomiting is caused immediately or mediately, Whether by a direct impression on the Stomach itself from the nature and force of impression, as Locally exercised, Vomiting ~~manifestly~~ necessarily ensues, - Or whether the impression of emetick agents, is first referred, or communicated to the great axis of perception, the Common sensory -

in such a manner or degree, as to cause, secondarily, the disordered motions of the former which constitute vomiting, - either by reflected irritation, or through failure of nervous power in the stomach, arising from morbid excitement, or diminished vital energy in the Brain — The question, simply is - whether the stomach is endowed with a proper sentient, capacity, and power of self action, capable of such a degree of unnatural or morbid excitation, as by these means alone to have vomiting produced, or whether the latter effect necessarily includes a prior preternatural excitement, or disordered perception, in the Brain, from the action of emetic agents on the stomach, - and this sensorial disturbance reacts upon, or is referred to, the organ first irritated, thereby occasioning nausea, vomiting & as secondary effects — — —

It would seem in fact, that both sides of this question admit an affirmative answer, - and that vomiting may depend on either contingency - There can be no doubt that the stomach ordinarily experiences, and behaves, a great and intimate dependence on the State of the Brain, and is powerfully infl-

- uenced by any preternatural excitement, or impression, affecting that organ, Thus nausia, and even vomi- ting, are not only common consequences of any injury, shock & infliction on the Brain, But are found to result likewise, from less violent causes of sensorial disturbance, such as disagreeable or disgusting objects, or things offensive (either) to sight, smell, or taste, or even to thought or imagination. All these have at times caused vomiting, both directly by first impressions, and by reflection, or association of ideas, — But if the stomach thus manifestly a (certain) great liability to great disorder of state and action, from the reflected influence of the sensorium, it would also seem to posses (pursue) organic attributes of impressibility, and self action, by which disordered motions may arise, and be continued, independent (as far as is apparent or pro- bable) of the direct or necessary influence of any other organ or part, — Thus we frequently have cases of irritable stomach, long maintained, and attended by constantly renewed acts of vomiting — in which there is no obvious debility, or disorder of the sensorial, or intellectual functions, and

Not even sensible nausea or sickness of the Stomach itself,- yet in these cases, it constantly and instantly rejects all things taken into it, and spontaneously renews its expulsive efforts for some time, even in a state of emptiness, and in the absence of all contents, other than its own secretions — It is true it might be said in these cases that the irritation of the Stomach kept up constant excitement of the ~~Stomach~~ Sensorium, and thus induced success-ive and continuous vomiting &c — In reply to such objections, it can only be urged, that this is beg-ging the question, because the usual evidences of sensorial disorder are not present or not palpa-ble

Vomiting would thus appear to be a State, or effect, referable to two modes of causation, or influence, which may be distinguished as primary, and secondary,- and the means, or agents, by which it is produced, by classed, as Direct, or indirect, emetics - To the former class however, belong nearly all the substances, which can, with strict propriety, be ranked under the head of emetic agents,- as it is only by the Direct impression of certain articles

on the Stomach itself, which impression is constantly (or generally) followed by vomiting, that we are enabled to determine their emetic properties.

This distinction appears to be well founded, whether the emetic operation arises entirely and exclusively from a peculiar excitement limited to the Stomach, or whether in these (and in all) cases, vomiting is only an ultimate result, growing out of an impression first made on the Stomach, thence communicated to the Brain, - and finally reflected with additional force - or in some inscrutable manner - on the organ first excited - Vomiting in other words, can only be termed, Direct, when ensuing to impressions first made on the Stomach itself - and these only are proper emetic agents, which exercise their influence on that organ primarily and especially - Whatever then constantly or generally causes vomiting by coming into contact with the Stomach, - is an emetic, - And although certain impressions made on other parts than the Stomach, such as severe injuries, great pain, violent emotions of mind &c may induce Vomiting, as part of their effect, or consequence, yet these cannot with propriety

be termed emetic causes. as their result of their influence is not constant or general. and when it does occur by these means, is only a part of their disturbing ~~influence~~ or disordering effects upon the whole constitution, of which disorder or derangement, the Stomach participates, in such manner, or degree as to fall into preternatural actions —

Vomiting is also said to be indirect, when produced by substances properly emetic. But which are applied or employed in a different manner from their introduction into the Stomach — Thus portions of an emetic substance applied to the surface of the Body (the cuticle being removed or abraded) have been found to cause nausea and vomiting, though, more slowly, & after a longer interval, than when taken internally. Their operation is then still emetic, though indirectly — In Vomiting produced by this means, more than one doubt present themselves :- Viz :- First whether the emetic effect, in such instances, depends on absorption of some part of the emetic substance, and its final application to the Stomach in sufficient quantity to cause nausea and vomiting by its specific action on that organ

Secondly, whether the absorbed emetic substances act more especially on the Brain, in the first place, secondly (by cerebral influence) on the Stomach, —

And thirdly, whether medicinal excitation of the whole nervous system — without special impression, primarily, as an emetic agent, either on the Stomach or Brain, may not so disorder the organic actions every where, or generally, as to cause those perverted motions of the Stomach, which that organ, by its peculiar endowments and office, is prone to betray under many states of preternatural, or excessive, constitutional excitement. — It is somewhat uncertain then, whether the effect, in the case in question, is properly and strictly an emetic agency, — or but the consequence of a general excitation and derangement, of which Vomiting is a contingency, dependent on the laws of vital associations, by which the Stomach responds, to the nature or force of general impressions. However unquestionable the fact that nausea and emesis have followed the application of emetic substances to the surface of the body, and however probable the inference deduced from such a fact, — that the effect in question resulted from the pecu-

-lian properties of the agents employed — More evide-
-nce seems to be required, than we are yet posse-
-ssed of, to prove that Vomiting by endermic ap-
plication, is an effect confined wholey, or ex-
-clusively, to the Qualities or action of Substances
of the proper emetic class, — and that no other
medicinal substance similarly used, might
or would, produce a like result. — —

Emetics, — their mode of influence
or impression, — with their employment and effects
as Remedial agents. — Emetics are entitled to con-
-sideration in a two fold point of view; first, as
evacuants simply, and secondly, as Antifebrile
or antiphlogistic means, capable of exercising
a powerful influence over all the vital and animal
forces and functions — As Evacuants simply or
mainly, emetics are designed and used, chiefly with
a view to unload the Stomach of any contents, which
are known or presumed — either by quantity or kind
to disorder the stomach itself, or derange the health
of the general system — They are thus used princi-
pally, as cleansers of the Stomach, from offensive

matters occasionally present therein, - or from its own morbid secretions. - But in no case can it be properly said, that emetics, however mild in nature or operation, are merely evacuants or cleansers of the stomach alone; - they frequently promote increased action of the intestinal canal likewise, and almost always augment secretion or exhilation by the skin, thus together with discharge of the contents emetic agents of every kind, promote sensibly other evacuations, - and augment many excretions, especially of the thinner or more fluid kind.

Emetics then are properly, general, rather than local evacuants. In this way, this class of agents contribute - often very efficiently - to unload not alone the great visceral cavities, but also the larger vessels and ducts, - and more especially still the extensive and important system of smaller or capillary tubes, which perform a most important part in the Oeconomy of health, and in which obstruction, or imperfection of office, is so liable to occur. These effects - the many and various evacuations, which Emetics are found to promote (directly or indirectly) are dependent on the peculiar nature,

And wide diffusion, of that influence which arti-
-cles of this class, exercise over the nervous and vas-
-cular functions at large, - an influence or man-
-ner of impression, which in respect to those great
systems, is found to be commonly, more or less stim-
-ulant or excitant in the first instance - But still
more explicitly and permanently depressing or seda-
-tive in its final or ultimate operation

As Antiphlogistic means however, or
counteragents of fever or inflamation, - together
with the immediate or remote consequences of these
affections, Emetics have been found to possess
remedial properties, not less obvious, extensive,
and beneficial, - than are desplaid in their
operation and effects, as evacuants simply,
or principally, - Whatever may be in fact the
nature and kind of their first impression
made by emetic agents, on the sensibility and
actions, of the parts with which they come into
direct contact, - Whether this impression be prim-
-arily stimulant or sedative, there can be no
question as to the general consequences, or
secondary effects, which ensue to that impression

The depressing or sedative influence of Emetics upon the sensorial and motive functions generally, is too obvious and uniform, to admit of dispute.— This general sedative agency of Emetics, is plainly revealed in the palpable evidences of diminished and disordered excitement in all the great systems and functions, which represent the presence or degree of Vital energy and action — The cerebral, nervous, vascular, and motive (or muscular) systems, alike experience and betray, the debilitating, or sedative power of Emetic agents — Even the endowing faculty of the great centers of nervous and ~~vascular~~ motive power, seems for a time suspended or greatly lowered. By the full or forcible impression of Emetics, as is manifested by the degree and continuance of a sense of Languor, verging to Syncope, as well as in the correspondent feebleness or incapacity of Action, which the moving organs — the vascular and muscular especially — every where betray —

It is upon this ~~counteracting~~ controlling property of Emetics,— alike over the functions of the Brain, the nervous System Generally — and all the Organs

Acting under the immediate influence of these great sources of vital endowment and power — depends the peculiar adaptation and value (or Beneficial action) of Emetics in nearly all the forms of excessive, or inflamitary excitements. — By lessening the activity of vital developments, or exertions, in the Brain and nervous system, the energy of organic action, is every where proportionally diminished. and by a judicious employment and regulation of this depressing power of Emetics. They may be made to constitute the instruments of reducing and restraining ever excitement, equally safe, and not less certain or efficacious, than any other Kind or class of antiphlogistic means. — As antiphlogistic agents indeed, Emetics possess the singular excellence, of being applicable in many cases, under circumstances in which no other means of reducing the vital forces, or actions, could be prudently employed. — In force and repetition of impression, adapted to existing circumstances, they appear peculiarly fitted to fill that vacuum, or heaters in our means of counteracting those

States of excitement - so frequently occurring in disease - in which action is relatively too great, (yet does not admit of reduction by resort to any mode of direct depletion, In all such cases emetic agents, may be employed in such a manner, as to supply the means of abating action, to the degree which may be desirable & sufficient - (yet without having produced the shock, or involved the hazards, of sudden depletion or, by sensible evacuation

By this property of promptly repressing the two great exercises of vital effort by the Brain and nervous system, Emetics have been found capable of restraining and finally of extinguishing, those states of superexcitation, which sometimes constitute the disease of disease, - and which injure or destroys by extreme, or fatal exhaustion, ensuing to unremitted and excessive activity, — The same is true also in respect to their beneficial influence - in that less, but still unnatural grade of excitability, which so frequently

Stands in the relation of final cause, or foster parent, of some future morbid revelation, some slowly formed but serious organic lesion.

The frequent repetition, and long continuance, of use in which the sedative impression of Emetics may be applied to the various conditions of the system indicating the employment of antiphlogistic means, gives them likewise a peculiar value in the treatment of Fever and Inflamation, in their protracted, and subacute or chronic forms. — In Chronic phlegmasia especially, those conditions of disease, dependent on the degree and continuance of superexcitation, (inflamatory actions) in a particular portion or extent of the capilary texture, and with which constitutional irritation, is more or less deeply involved — there is perhaps no class of Medicinal Agents, upon whose ~~counterirritative~~ counteractive influence or power, so much reliance can be placed, as in the sedative effect of Emetics, — regulated in their force and Repetition of impression, by the intensity and persistence of the Local and Symptomatic excitation, which it is desirable to control

or subdue — In those cases there are ~~two~~ no reducent means whose impression can be better regulated, or whose ~~approaches the constitution~~ repetition the Constitution will bear so well, as the influence of Emetics prudently exhibited, — and none perhaps equally qualified both to repress the accumulative tendency of localised irritation, and to break the habit of general morbid excitability, which responds injuriously to accumulated phegmasial development

Such are the general principles, which experience appears to have founded on the properties and effects of Emetic substances — An Inquiry in the proper application of this class of remedies, to special forms and conditions of disease, — or Minute reference to all the ~~particular~~ practical indications they are adapted to fulfill, would lead to a discussion of the subject much more comprehensive, than is suited to the main purpose and principle object of essays like the present

A few remarks, recapitulating and condensing the views entertained in respect to the nature and effect of the influence exercised by the class of reme-

dies under consideration - will conclude what ~~I have to say~~ is deemed proper further to advance on the properties and use of Emetic agents. ——

Emetics exercise a powerful influence on the whole Constitution. scarcely inferior to that of the Sanes itself. and fruitful alike of good and evil

The operation of Emetics are two fold. primary and secondary - Direct and powerful initially to the Stomach, and alimentary Canal. they are equally powerful. though in direct & sedatives. on the System at large. the Brain and nerves. the Heart and Bloodvessels. feel and transmit. the depressing influence of Emetics throughout the entire circle of Vital Association. - Hence the source of their usefulness in many forms of Disease, - in phlegmasial affections especially - when emetic agents yield to none of the medicinal means we possess, in producing beneficial results, under judicious administration.

When of Emetics act first. or more especially, on the Primæ Viæ. they operate, most sensibly, also on the Secundæ Viæ. and if often salutary evacuations or clearances of the former, they may become sedatives and exhaustants of nervous energy - and Vital action

every where, dangerous when excitability is great, and power low or exhausted. — Hence caution in the use of Emetics, on a two fold account. 1st. The condition of the organ, which is to receive their primary Stimulant impression — and 2d. the State of the general excitement, which is to encounter or sustain, their Secondary or depressing influence. — If the Stomach is imbued with a high or morbid aptitude to irritation — the least evils that can ensue, to the primary Stimulation of Emetics, will be very sensible increase of nervous disorder — and febrile commotion — In a still higher State of Susceptibility by the Stomach to the action of irritants, — based on actual phlogosis, or a near approach to it, in the textures of that organ, direct and violent excitation, by emetic agents, may augment or perpetuate, such a result, — not alone in the organ, on which their force is first exerted, but may promptly devolve a like catastrophe on the Brain or Spinal ~~cord~~ chord — always more or less responsive to severe irritation, in the great central axis of

so many sympathies.—

While then the general nervous and vascular excitement is full, well maintained, or rising to excess,— and nothing appears to forbid the temporary irritation of the Stomach by emetics,— Such agents may be perfectly safe or eminently useful.— But when the nervous energy is failing every where, from serious expenditure, or sudden exhaustion,— and the tide of capilary excitement is retreating from the surface;— When the extremities become cold, and the breathing embarassed. And more especially if to these are added evidences, that the Stomach, Brain, or Spinal Chords, are undergoing inflamitory involvement,— Emetic agents are emphatically no longer within the safe resort of the Physician.— But it has been said, that in some forms of disease, where excitement was unequal or deficient— And in eruptive fevers more especially, where the Characteristic development on the surface, was partial, imperfect, or retrocedent, the excitant influence of Emetics, would often in the former case,— arouse and equalise reaction— and in the latter replace the proper

eruption, with all its salutary consequences.—
If the deficiency, or interruption in question, occur early in these affections, before the vital powers are expended, or any serious organic involvment is betrayed, the position above refered to is true, and the knowledge of it eminently useful and valuable—
In these cases some internal cause of offence to the stomach (perhaps a state of local congestion) or else some error in the conduct or management of the patient, keeps up, sensitive irritation, in the constitution, and prevents the equal diffusion, or vigorous exercise of the nervous power.— Emetics here may remove the cause of offence, or arouse the energies of nervous and vital association, embarrassed, and oppressed, but not expended— or extinguished.—

Constitutional irritation is accumulative in nature,— and may become so exalted, or consentrated, as to palsy the nervous power generally, and prevent that development of the vital functions, necessary to healthful reaction,— and this state of accumulative irritation may go on increasing untill the vital forces are fatally quenched,— such is the case with all who die in the chilly stage of fevers.—

The danger from the accumulative property of irritation, is greater, in proportion, as previous morbid action, or other debilitating causes, may have expended, or lowered, the vital energies of the constitution.— Whatever then, is capable of lessening or dissevering, the morbid association or susceptibility, by which constitutional irritation multiplies, may not only prevent its increase to a fatal amount, but may suspend its influence so far, as to admit, or favour saturary reaction.—

The nervous functions liberated from an overruling morbid controul, revert spontaneously — or from inducement supplied by art, to the exercise of their normal influence.— It is in cases like these that emetics sometimes become and officy — the indirect agents of most salutary revival of general excitement and action.— By the new susceptibility they provoke, and the vital associations they arouse or restore,— the paralysing influence of augmentive irritation, is sometimes suspended, or overcome and a more healthful activity every when diffused.

These positions appear to be based on on the known physiological laws of the constitution.— and are supposed to be demonstrated by

may phenomena of disease. - But the limits which propriety and custom have defined for essays like the present, admonish against any further attempt at their illustration, by addressing the evidence of their truth, constantly presented in the varying state and operations of the living system.

In concluding a task prescribed by the rules of the Institution, whose favour I aspire to obtain, - I respectfully ask indulgence, for the imperfect performance of the Duty, I have endeavoured to discharge. - I would also beg leave to acknowledge the grateful attachment of a pupil towards the Institution itself, for the opportunities, and means of instruction in which I have participated, and at the same time to express a sincere desire, that it may go on increasing in honors, prosperity and usefulness -

An
Inaugural Dissertation
on
Antimony
Submitted to the consideration
of the
Provost, Trustees
and
Medical Faculty
of the
University of Maryland
for the degree
of
Doctor of Medicine
by
Albert G. Welch
of
Baltimore

March 1834

To

James S Owens M. D.

Under whose intelligent preceptorship I commenced my professional studies, and to whom I am indebted for many evidences of personal friendship

and to

W. Willis Baxley M. D

who subsequently afforded me frequent opportunities both in private and public practice of obtaining medical knowledge

This dissertation

is respectfully dedicated in testimony of the respect and gratitude of the Author

Albert G Welch

# A Dissertation on Antimony

But little remains to be discovered respecting the therapeutic employment of this article. Its known value, extensive application, and beneficial results which have attended its persevering use in many cases of peculiar obstinacy, have thrown about it an interest well calculated to attract the attention of the medical student and to induce him to investigate its properties and its applicability to various forms of disease. With reference to this rather than from any expectation to cast new light upon it, I have selected antimony, and more especially that preparation of it termed Tartrate, for the subject of this dissertation, & shall consider 1st its history 2nd its Chemical qualities, and its various preparations, and lastly its therapeutical employment in certain diseases.

The origin of the word Antimony is very obscure, the most received etymology is from ανθι

against, and wore, a monk, because Valentine by an injudicious use of it, poisoned his brother Monks! Antimony is a metal of a bluish white color, hard and brittle, resembling tin in its lustre, it is of a lamellated texture, and when handled imparts a peculiar smell to the fingers, it enters into fusion at a degree of heat a little above red, and when suffered to cool presents a stellated appearance on the surface. The Ancients had a knowledge of this metal to which they applied the appellation of Stibium, but it like most of the best medicines found its way as an internal one into medical practice with great difficulty, the Ancients if their Stimmi was really antimony believed it to be a most violent poison and fit merely for external use, such was the opinion entertained of it until about the middle of the Sixteenth Century. About which time Basil Valentinus published his Currus Triumphalis Antimonii, in which various preparations of this metal are mentioned, & he urgently recommends their internal employment. It was warmly advocated by Paracelsus who announced it as an

invaluable remedy in Plague. In the plague which ravaged Bohemia in 1562 Antimony was extensively employed, but being ignorant of its virtues, it was frequently employed improperly, and occasionally attended with dangerous & violent Consequences. It was therefore soon denounced by the Medical Faculty of Paris as a fatal poison; in consequence of which the French Parliament issued a severe decree against its internal employment, in 1566. In 1603, the celebrated Theodore Turquet de Mayerne, was prosecuted for having sold Antimonial preparations contrary to the decree of parliament, and Besnier a distinguished physician of that time was expelled the Medical Faculty of Paris for having given this proscribed remedy. After this decree had been suffered to stand for more than half a Century it was at last repealed, and Antimony soon became one of the most boasted & popular articles of the Materia Medica. As this is one of the metals by which the alchymist expected to gain his imaginary riches, it was tortured in a variety

of ways in the Sixteenth & Seventeenth Centuries, from which has resulted a great number of preparations, differing however more in the degree than in the quality of their remediate powers. The pure Metallic Antimony is entirely insoluble in water, and alcohol, vegetable acids however act upon it though but feebly; and hence Cups of this metal were formerly employed to give an Emetic quality to wine. Thus much for the history of this metal, we come now to the consideration of its properties.

Antimony is a metal of a grayish white Color, having a strong resemblance to tin in its lustre, having a slight bluish shade, and very brilliant, of the Specific gravity 6.7. Its surface exhibits facets and a star like figure, this appearance proceeds from a crystallization or arrangement of its parts from cooling. It sometimes occurs native but more frequently combined with Sulphur, to distinguish it from the pure metal, it is named Crude Antimony, or more properly Sulphuret of Antimony the simple name Antimonium Stibium being appropriated to the metal itself. It is totally destitute of malleability, and may be easily beaten to powder,

Antimony also unites with phosphorus, it decomposes water at a red heat; Sulphuric Acid boiled upon Antimony is feebly decomposed, Nitric Acid dissolves it in the cold State, Muriatic Acid scarcely acts on it. The Oxygenated Muriatic Acid gas inflames it by percussion and the liquid acid dissolves it. It fulminates with Oxygenated muriate of Potash. Of the neutral Salts Antimony is only acted upon by Nitre, and Sal Ammoniac, the first deflagrates, and the heat produced thereby volatilizes some of the Metal, Sal Ammoniac presents nothing different in its action on metals in general.

Method of Obtaining Antimony. This may be accomplished by several processes, I will only mention one, however, and which has been considered the most simple, and that is to melt the Sulphurettes Antimony with an equal a half its weight of black flux, the Alkali joins the Sulphur, and a part of the metal in its pure State, separates to the bottom of the vessel. this process may be considered as not the most economical, since by this method only half the metal is obtained. For ordinary purposes however it answers very well.

Antimony is to be seperated from other metals by various processes, according to the nature of the metal with which it is connected. From gold & platinum it is to be obtained by evaporation, or the action of heat and air. From other metallic substances it is best seperated by the addition of sulphur, or, as in some cases by scarification as from Lead.-

Preparations of Antimony. Crude Antimony was, as before hinted, subjected to Chemical processes, and from which resulted the various preparations, many of which are now in use, for the purpose of giving it medicinal virtues, to make a strong and powerful remedy for some purposes, or one that shall be gentle and safe for others. The preparation of the metal now in use are Sulphuretum Antimonii, Oxydum Antimonii, Sulphuretum Antimonii precipitatem. Pulvis Antimonialis, Vinum Antimonii Tartarizati, Antimonium Tartarizatum.

The Sulphuretum Antimonii is now scarcely ever employed in Medicine, and never for the purpose of producing Emesis, when it is used it is more for the purpose of producing Diaphoresis, or to excite the other Secretions, which it does so mildly as for

its action to be almost imperceptible. The operation of Antimonial remedies seems to be "an excitation of the Capillary vessels throughout the whole system, but more especially those of the cutaneous surface (Eberle) By acting thus they have an immediate tendency to moderate excitement, and equalize the circulation, and thereby removing Chronic inflammation if any, and also by exciting a new action in the vessels of the skin it removes those affections of that tissue which are dependent upon the vitiated functions of its vessels. The Crude Antimony may be formed artificially by fusing together Antimony & Sulphur, or by transmitting a Current of Sulphuretted Hydrogen gas through a solution of Tartar Emetic (Turner). It Consists of One equivalent of Antimony 44. & one equiv. of Sulphur 16 — 60. This preperation has been highly recommended by some writers for the Cure of Scrophulous degenerations, & Chronic Rheumatism but with no evident advantage. It has been regarded as an infallible remedy in plica polonica.

Oxidum Antimonii. This preperation is very little employed. It has been found to agree in its effects very much with Tartarized Antimony,

it is prepared by dissolving an ounce of Tartarized Antimony, and two drachms of Sub Carbonate of Ammonia seperately in distilled water, (mixing the Solutions, & boiling till the oxide of Antimony is precipitated which is to be washed & dried.—

Sulphuretum Antimonii precipitatum.

Precipitated Sulphuret of Antimony. It is prepared by boiling Sulphuret of Antimony with a Solution of potash and adding to the filtered liquor Sulphuric acid as long as any precipitate is thrown down— it is of a reddish yellow color, it is a Combination of Oxide of Antimony, with Sulphuretted Hydrogen and Sulphur, and might be named Hydro Sulphuretum Oxidi Antimonii. The Analagous preparation, called Kermes Mineral, which is used on the Continent, is the precipitate which subsides on cooling from the liquor formed by boiling a Solution of potash on Sulphuret of Antimony, it differs from the former in containing less Sulphur, and appears indeed to be (merely) a Combination of an oxide of Antimony with Sulphuretted Hydrogen. it is given in a similar dose.

The powder of the Sulphuretum Antimonii precipitatum,

is inodorous, and entirely insoluble in water. This preperation according to the dose in which it is given is either an Emetic, Diaphoretic, Alterative, Cathartic.

It has generally been recommended in Cutaneous diseases, and with Considerable Success, indeed its power has greater claims to attention in this respect than any other of the Antimonial preparations. It has also been recommended in Chronic Rheumatism, and it appears to be better adapted from its mild action and unirritating qualities to intestinal affections, than any of the other Antimonial preparations. Where an acid is thought to be in the Stomach it should be united with an alkali a Aromatic Confection.

Pulvis Antimonialis. To prepare this take of powdered Sulphuret of Antimony One pound, Hartshorn Shavings two pounds, mix and throw them into a Crucible, heated to whiteness and stir Constantly until visible vapor ceases to arise, rub the residue to powder, and put it into a proper Crucible, then apply heat and raise it gradually to whiteness, and keep it so for two hours, rub the residue into a very fine powder (London)

This preparation is intended to furnish a

substitute for the Celebrated empyrical Remedy of Doctor James an English physician, to which the appellation of James' powder is applied. This preparation is seldom employed in France, but in England and in this Country it is a very fashionable prescription in almost every febrile affection. Dr. Pearson of London found the genuine powder on analysis to consist of phosphate of lime, and oxide of Antimony, and guided by his results advised the famula adopted by the British Colleges for producing an imitation of it.

Pulvis Antimonialis varies in its effects, according to the dose in which it is administered, it acts as a diaphoretic, Cathartic, a emetic - It is with a view to its diaphoretic qualities that it is so extentively employed in those forms of fever in which there is increased vascular action, but in fevers of a very low type, as in Typhus it is a very dangerous Remedy, from the excessive evacuations it is likely to induce. Dr. A. S. Thomas says, "it is given in acute Rheumatism with the best results, it should be conjoined with Camphor, Calomel, and opium." But it has as frequently disappointed as it has answered the Drs. expectations. It is characterized by Duncan as one of the best Antimonials we possess.

still he admits that its effects vary very much, either owing to some constitutional peculiarity, or variations in its composition. Dr. Cheyne & Stoker recommend the internal use of small doses of James' powder or pulvis antimonialis where there is an habitual tendency to inordinate sanguineous determinations to the head. Dr. Eberle says he knew one instance of this kind, in which two grains of James' powder was used twice daily to be of unequivocal benefit. Dr. Stoker has also published some very favorable results of its use in apoplectic cases. He says that it has an obvious tendency to diminish the determination of blood to the head and that a continued use of it, in small doses has the effect of completely removing the disposition to apoplexy. Dr. Robert James the discoverer of this medicine speaks of it in the most exalted terms, and considers it "a most effectual remedy for Measles, Small Pox, Yellow Fever, agues, and intermittent fevers, Rheumatism, Sore throats, pleurisies, St. Anthony's fire; for bilious & gouty complaints, for inflammation of the bowels, the Bladder, Lungs, or any internal part; as well for the lowness of Spirits, and uneasiness proceeding from slow & latent fevers, which are generally mistaken

for vapors & Hysterics. The powder remarkably stops the progress of a cold and certainly prevents the numerous ill consequences arising from that very common disorder. & it has been used with great success in Hooping Cough" For the disorders of the brute Creation he considers this powder "equally efficacious."

If subsequent experience sustained the recommendation of Dr James, we should be compelled from the above remarks to acknowledge his powder almost a universal panacea. Like most others however of enthusiastic dispositions and who have been hurried beyond the bounds of reasonable expectation & fair deduction, by the first successes of a favorite invention, Dr James seems to have formed his opinion and judged of results under the influence of partial favor, at least we are forced to this Conclusion, as well by our own limited observation, as by the recorded experience of others, who appear to have been governed in their observance of its effects by an entire regard for truth, and an unprejudiced desire to bestow upon its therapeutical virtues a just consideration. The opinions of Dr Hawkins, Johnson, Phillips, and many others whose names

might be enumerated, fully sustain the remark here made, and although they consider it to possess fair claims to rank among the most valuable of the secondary or less efficient Antimonial preparations, they still hold it very inferior both in regard to certainty of result, and decided & prompt impression to the Tartarized Antimony. No therapeutical effect can be expected from it, which cannot be more certainly and safely produced by tartarized Antimony, and it seems to be the opinion of some of the best practitioners that this Antimonial may in all cases be advantageously substituted for it. A residence of 18 months in a Malarious district, afforded me frequent opportunities of witnessing the effects of this Medicine in Bilious diseases, in which it was found altogether inefficient and inert, making no impression upon those affections unless united with Mercury an article in itself exercising a peculiar remediate influence over Malarious disorders. —

Dr. Hawkins of Hitchin, made some experiments with the pulvis Antimonialis (some of which was obtained from Apothecaries Hall) and after having carried the dose to one dram without producing any sensible effect on the System or Constitution, or any function of it, concludes, that the Medicine on which we place the greatest Confidence is

totally inert. Dr Johnson the learned editor of the (Med. Chir. review) says that he "can hardly come to the same conclusion" at the same time he seems to admit that there "is some foundation for the scepticism of Dr Hawkins" and continues" The pulvis antimonialis is given so frequently in combination with other medicines and when given alone it is so seldom productive of effect, that we do not much wonder at the delusion under which we have laboured as to its medicinal properties. The Tartrate of Antimony should we think, be trusted to instead of the Antimonial powder" (Med. Chir. Rev. Vol. 1st N.S.)" Mr Phillips on analysing specimens of Pulvis Antimonialis, procured from two respectable sources, he found one to "Consist of 35 parts of peroxide of Antimony, & 65 of Phosphate of Lime. The other specimen showed 38 parts of the peroxide to 62 of the phosphate" He also analysed James' powder" and found it to consists of nearly the same ingredients & proportions" He therefore comes to the conclusion that both forms are altogether inert. Dr Johnson also differs with Mr Phillips simply because he has seen sickness & vomiting produced by both preparations a number of times (Med. Chir. Rev. Vol. 2nd N.S. – ).

Vinum Antimonii Tartarizati. Antimonial Wine.
This name is given to a solution of Tartar Emetic & Potash in Wine. The mode of preparing it is to "take of Tartrate of Antimony & Potassa a scruple, Wine (Teneriffe) ten fluid ounces. In the old formula for the preparation of Antimonial Wine, vitrified glass of Antimony was directed to be used, but as the tartarous acid contained in the wine, acts on the oxide of Antimony, and renders part of it soluble, the quantity must be uncertain, and the wine cannot be uniform in strength, consequently this formula should be obliterated from the Pharmacopeias.
The Antimonial wine may be used in all cases where tartar Emetic is indicated, it is a most excellent Medicine, in the Croup, in pertussis of Children, Catarrhal affections, Asthma, and many other diseases. "Antimonial Emetics" says Dr. Armstrong "have been very generally in Typhus fever, and according to my observation, are serviceable when the fever is of the least complicated form, commonly producing an improvement of the Skin, respiration & pulse in particular; & perhaps it is on the power which they possess of determining the blood to the surface,

and of changing the morbid states of the circulation, that their efficacy depends" (Armstrong) on Typhus) Dr. Eberle says " In Typhus pneumonica I have derived the greatest advantage from Antimonials, in every stage of the disease" In the typhoid and typhus pneumonica" says Professor Potter "that occasioned such lamentable mortality of late years throughout the United States" Emetics judiciously employed were more beneficial than any other remedy"

I have tried the efficacy of Antimonial wine on my own person, whilst suffering under Intermittent fever, of the tertian type with the happiest results, it has entirely checked the cold stage, and rendered the hot stage much milder, and of shorter duration - Dr. Armstrong whose authority is entitled to the highest respect recommends Emetics in Cynanche laryngea, which is certainly the most dangerous of Anginose disease - He states that in five Cases of this disease he exhibited "Tartarized Antimony), sometimes combined with ipecacuanha, in repeated doses, until free & frequent vomiting took place, no circumstance of my professional life" he continues "ever gratified me more, than the great and sudden relief which the vomiting afforded, in reality

it removed all the urgent Symptoms at the time, and being excited as soon as ever the slightest Signs of Stricture in the Larynx returned at last completed the recovery."
Dr. Cleghorn used the Vitreum Antimonii Ceratum in combination with Ipecacuanha, in the treatment of dysentery, in such doses as to produce both Emesis, and Catharsis." (Cleghorn's observat. on the Epidem. of Minorca)"

The advantages of Antimonial wine, are, that it affords the means of exhibiting minute doses of Tartar Emetic, and is more advantageous than an aqueous solution of that salt, which is liable to spontaneous decomposition, it is frequently given in minute doses as a diaphoretic a expectorant, and is given very generally as an Emetic in infantile Cases.

There are several other preparations of Antimony, at all of which I shall take but a cursory glance, as the Butter of Antimony, Crocus of Antimony, Glass of Antimony &c.

Butter of Antimony. This preparation is unfit for internal employment, but chiefly used as an external preparation, has been tortured in a variety of ways. it has been prepared with Luna Cornea in the place of Corrosive Sublimate, a the her chloride of Mercury, and is then the Oleum Glaciale Lunare of Lemery, with the martial instead of the crude regulus, it is the martial butter of Antimony,

and attempered by thrice its weight of Sulphuric acid, is styled Liquor pellegrini— Sala's Spiritus (Mellis. Antimonii abstractus, is only the butter of Antimony in a milder form. The Oleum Antimonii compositum of Basil Valentine differs from the butter of Antimony in the mode of preparation only, and the mixture of quicklime, which does not rise in distillation, probably adds nothing to the pungency or efficacy of the application. The balsam of Antimony, and the liquor vulnerarius, of Basil Valentine do not belong to this head, we mention them here only as external applications. Butter of Antimony decomposed by potash affords an oxide which has been used in preparing the tartrate of Antimony.—

Crocus of Antimony. As an Antimonial this preparation is so uncertain in its operations that it is never prescribed, it is used in making some of the other preparations of this metal.—

Glass of Antimony. This preparation is violent, and at the same time uncertain in its operation, that it is never prescribed, it is not used except in making some of the other preparations of this Metal.—

## Antimonii Tartarizatum. Antimonii et Potassæ Tartras, U. S. Dublin.

## Tartarized Antimony. Emetic Tartar.

This is decidedly the most valuable of all the preparations of Antimony, and on this account the processes for obtaining it have been frequently altered, principally in the selection of the Oxide employed, of all the Oxides, perhaps the vitrified oxide is the most unexceptionable. To prepare it "Take of Glass of Antimony, and the Supertartrate of Potassa, each, a pound, boiling distilled water a gallon, mix the Glass of Antimony, and the supertartrate of Potassa intimately together, and throw the mixture by degrees into the boiling distilled water stirring constantly with a rod, boil the whole for a quarter of an hour and set it aside, filter it when cold, and evaporate the filtered liquor that Crystals may be formed" London.

Respecting the solubility of this salt there are a variety of opinions, Dr. Duncan, who selected very pure specimens for examination, states that it is soluble in three times its weight of water at 212 degrees, and in fifteen at 60 degrees. According to Dr. Saunders, one ounce of water at 60 degrees dissolves 52 grains of the fully saturated salt, while of that generally met with it dissolves from thirty two to thirty five.

Incompatible Substances. " Mineral acids.

Alkalies, and their Carbonates, most of the metals, Soap, Hydro Sulphurets, and many infusions & decoctions of bitter and astringent vegetables, One fluid ounce of the decoction of yellow bark, is capable of Completely decomposing one Scruple of this salt (and the Compound of Tartarized Antimony and bark, is said to purge and to Constitute the "Bolus ad Quartans" of the French Physicians.) Infusion and tincture of Galls throw down curdled and inert precipitates of a dirty white color inclining to Yellow. Rhubarb is also incompatible, The infusions of Gentian or Wormwood do not decompose it. The alkaline Sulphates if they be completely neutral produce no disturbance in Solutions of tartar emetic. It appears therefore, that the famous "Emeto Purgative" of the French Schools consisting of Sulphate of Soda and tartar Emetic in Solution is not the unchemical Mixture, which it has been supposed by some to be, I have seen this remedy used frequently by my friend Dr. Bayley whilst he was physician to the Maryland Penitentiary, with the happiest effects. It is a favorite prescription of Dr. Claude & Brewer in the forming stage of Scarlatina. (My preceptor Dr. Ewend, used this prescription freely in the Commencement of those

inflammatory diseases, incidents to miasmatic districts, after using the lancet, I have seen a stop put to cases, which would otherwise have proved troublesome, by a single exhibition of this medicine.

The Tartarized Antimony, is as we have before said the most valuable of all the preparations of Antimony - Its general action is that of a sedative upon the Circulation, while on the contrary it excites most of the Secretions - According to the dose in which it is given it acts as an alterative, diaphoretic, expectorant, diuretic & emetic.

The only proper form for exhibiting it is in Solution. it should be given in divided doses, because the intensity of its action on the body is liable to variation, from difference in its own strength. if we wish to produce vomiting it should be repeated at short intervals, and at longer intervals if we wish only to have its action on the Skin & Lungs.

It is chiefly given at the Commencement of fevers and febrile diseases. Where poison or other acrid substances have been taken into the Stomach, and we wish to evacuate the Stomach as rapidly as possible we generally resort to the Sulphate of Zinc which acts with great promptness, When this Cannot be obtained the Tartar Emetic will prove a valuable substitute in many cases. It also

sometimes acts as a cathartic. Tartar Emetic in solution is much employed in Europe for increasing the gastric secretions and maintaining for a length of time a soluble state of the bowels, as a stimulating application to the region of the stomach in Angina pectoris, and in Hooping Cough it has been frequently recommended. Senthois of Montpelier advises small doses of it in incipient Phthisis. During the past Winter I had frequent opportunities of witnessing this practice as pursued by Dr. Baxley in the Maryland Penitentiary, the Dr uses it in the quantity of one grain to a quart of barley water, of which a wine glassfull was given every one, or two hours according to the effects, and I can say with confidence, that in his hands I never knew it to fail, when the treatment was begun in time, and on a previous occasion he stated to me that "in diseases of the Lungs & Chest generally, after the use of the lancet he placed more confidence in tartarized Antimony than any other single remedy" Dr. Baxley did not confine himself solely to the internal employment of it, but used it also as a counter irritant in the form of an ointment. In 1832 I had an opportunity of trying the efficacy of pustulation by tartarized Antimony in paraplegia, in the case of a boy

who had six months previous to my seeing him, been thrown from a horse whilst going to mill, he injured his Spine very much. Complained ab to the time I saw him, with severe pains in his back & loins, but never would be examined, nor tell how he was hurt. he was, at the time I first saw him, labouring under a bilious fever for which he was treated, although he referred to the pain in his back. I thought it was nothing more than the pain, which is an ordinary Symptom of the disease.

On March 28th I discovered that he could not move the lower extremities, I immediately examined the Spine, and found a lump about the size of a pigeon's egg, between the ninth & tenth dorsal vertebra, which gave Considerable pain on pressure, he was cupped along the Spine & lost blood generally, after which he was directed to use the tartarized Antimonial ointment which produced extensive pustulation, the ointment was continued for some time, together with Stimulating applications to the legs and feet. on April 25th he was walking about Cured. In this case the posterior Spinal Columns or Columns of Sensibility were not at all affected by the concussion.

I would strenuously advise the use of this ointment in every case of Paralysis which does not readily yield

to other means. I would not pretend to say that every case of this disease can be cured by it. To express such confidence in its powers as a counter irritant would indicate an injudicious hastey of opinion, and an indiscretion of enthusiasm, unbecoming ~~the~~ what we should rather aim to be, diligent and careful observers of facts, for these and these alone can promote a branch, so obligatory in its responsibilities, and so important in its application to human ills. At the same time not to record and make known, the salutary result of rather a novel application of means, (at least so far as I know,) to a morbid affection of generally admitted obstinacy, would be a dereliction of duty equally censurable. From the general success which I have seen to follow the employment of this ointment in rheumatic affections and other diseases, requiring the aid of counterirritants, it constitutes a remedy of too much value, to be lost sight of in our too frequently foiled treatment of Palsy, and paralytic affections.

Dr Wilgman, a german physician has lately recommended the use of Tartarized Antimony for removing opacity of the Cornea. The remedy is to be applied in the form of an ointment, composed of fresh butter and Castor oil aa zj. Tartarized Antimony IV grs, gradually

increased to twenty - A small portion of this is to be introduced into the eye every (morning and evening); and a warm compress applied pretty firmly to it, for two or three hours after the introduction of the ointment to allay the pain which it sometimes creates.

In the 4th Vol. of the Medico Chirurgical Review. O.S. it is stated that during the winter of 1815, Dr. Pommer had a great many patients, labouring under intermittent fevers, under his charge while the Army of Wertenburgers was quartered on the Loire and Allier. Finding the bark to be of little efficacy in a number of Cases, he was induced to try the effect of bringing out Crops of pustules by the tartarized Antimonial Ointment, and in every instance in which he had used it, to his great astonishment the fever, whether tertian, quartan, or irregular intermittent, yeilded as soon as the pustules were completely formed, "We have of late years" observes Dr. Johnson "found this ointment so useful in many anomalous affections, that we consider it a very important item in the Methodus Medendi.

The following is the form which we have found most useful & quick in operation:-

℞. Axungiæ ℥j
Antim. Tart. ℥iij.
Tinct. Lytta gtts xx m.

ft. unguentum. A Sixth part of this prescription is generally sufficient to be rubbed on any part every night, and in three or four frictions a copious crop of pustules will appear. In several instances it has brought out many pimples on the Scrotum, when rubbed on distant parts of the body.

Tartar Emetic is sometimes given internally for the purpose of producing a relaxation of the muscles to facilitate the reduction of dislocations.

Toxicological properties. The Symptoms produced by tartar Emetic when taken in doses sufficiently large to prove poisonous, are "a strong metallic taste, nausea, copious vomiting, frequent hiccough, burning pain in the Stomach; colic, copious Stools; fainting, Small, Contracted and accelerated pulse; cold Skin, Sometimes intense heat; difficult respiration, loss of Sense, convulsive movements; painful Cramps in the legs; prostration and death. To the Symptoms is sometimes added difficulty of deglutition" All these Symptoms do not always occur, Vomiting and purging are frequently absent, and when they are the other Symptoms are greatly aggravated. The therapeutical plan to be employed in such Cases will essentially differ according to the Stage in which we find the patient;

There are to be observed three Stages. 1st a Stage of debility 2nd of Collapse, and 3rd and inflammatory Stage.

The practice to be pursued in the first Stage will be to evacuate the stomach as speedily as possible, this is to be done by giving the patient large quantities of warm water, tickling the throat and fauces with a feather. The administration of large quantities of oil will sometimes favor vomiting and (may) prove useful. But if (vomiting) be not quickly induced, a large amount of Cinchona should be immediately given, (mixed with water or in decoction with a view to decompose the poison. If the bark be (not at hand decoctions of Common tea should be given until the former can be obtained, Alkaline Sulphurets according to Orfila augment the irritation of the poison. Nevertheless Dr. Duncan has recorded one Case in which the Sulphuret of Potassa was Completely Successful. Should the (vomiting) be excessive opium should be used.

In the 2nd Stage we generally find the patient in an excessive State of debility a Collapse, induced by the (nausea a (vomiting) of the first Stage. The pulse in this Stage is almost imperceptible, Spasms of the

extremities, the surface clammy, and covered with a cold perspiration &c. We are now to resort to the use of Cordials, Stimulants, epispactics to the extremities, abdomen, and over the region of the heart, warm, stimulating embrocations &c.

The 3rd or inflammatory Stage, is a Gastro-Enteritis and must be treated accordingly.—

An Inaugural Dissertation
on
Gastro-duodenitis
Submitted to the examination
of the
Provost, Trustees and Faculty of Medicine
of the
University of Maryland
on the eighth day of March, A.D. one thousand
eight hundred and thirty four
for the
Degree of Doctor of Medicine
by
William H. Stokes
of
Baltimore

Before entering strictly upon the consideration of the affection denominated Gastro-duodenitis by modern Pathologists, it shall be my endeavour, to identify with the consequences of inflammation occurring in its most intense grade in the lining membrane of these structures, that series of morbid phenomena which constitutes the Yellow Fever of authors;- an identity, which, I conceive, may be established by the concurrent testimony of all, who have studiously observed the disease from its earliest inception to its termination, who have interrogated the cadavers of victims to it, and have compared the alterations they have presented to them with the symptoms developed prior to death.

Yellow fever has, by the majority of its historians, been described as an Idiopathic disease;- as the product of a peculiar and essential entity, and thus as being dependent upon a general modification of all the organs of the economy. We observe however little correspondence in their views, when considered relatively either to its Cause, Pathology or Treatment. Of English authors, it is

to Dr Rush that we are undoubtedly indebted for the fullest and most lucid description of the characteristic traits appertaining to it. As far as relates to its distinctive features, they are delineated by this profound Philosopher, alike distinguished for the accuracy of his judgement, and the deep penetrating scrutiny with which he contemplated passing phenomena, with a precision and perspicuity that greatly & justly excites our admiration. But unfortunately intermingled with much that is eminently useful there pervades this account many false notions and erroneous views, which we are to ascribe to the then existing defective condition of the Physiologico-pathological department of the sciences. The principles upon which is attempted the elucidation of these facts and phenomena, and the conclusions deduced from them, being incontestibly proved, by the lights of modern science, to be devoid of foundation in nature, and of necessity deleterious in their practical bearings, it becomes us diligently to analyse the heterogeneous mass, carefully to seperate that which may be mathematically demonstrated to be absolute fact, excluding all that is hypothetical and inconsistent with reason & nature, and endeavour, with the aid of better established principles, to deduce inferences of sounder and more extended application in practice. It is alone by such a mode of procedure, that we can expect to realise the fondly cherished hopes of the present day, that the Divinity of Medicine, having now shaken himself from the dust of antiquated systems, having become disenthralled from the weight of the

unsightly and disgusting habiliments imposed upon him by Authority, has taken his station among the exact & mathematical sciences, never more to have his right disputed, nor the dignity and purity of his character assailed. That, under the guidance of the principles of Inductive philosophy, the march of Medical improvement is henceforth to be onward.

Subsequently to the epoch above alluded to, the discussions, that more particularly have engaged the attention of writers on Yellow Fever, relate to the nature of the morbific poison productive of it, and its mode of action on the human system. Disputes almost interminable have prevailed relative to the Laws by which it was supposed to be governed in its propagation & extension;- and many contradictory opinions exist in reference to the particular organs or structures upon which it is most disposed to exert its influence. Few however conceive the idea of referring the primary modification to an irritated condition of particular tissues; or of classing Yellow Fever amongst the acknowledged Phlegmasia. Tommasini convinced of its propriety observes "I do not know what should prevent our classing Yellow Fever among the Phlegmasia, since we rank with them Peripneumony, which is a general Pyrexia, conjoined with inflammation of the Lungs, as the Yellow Fever is a general pyrexia conjoined with inflammation of the Liver and the internal surface of the Stomach and Intestines". The few, who have considered the fever and its accompanying phenomena consecutive to an original focus of phlogosis, manifest a striking unanimity of sentiment in the localization they have severally made of this focus. Pinel, from the invariable

observance of symptoms indicative of Gastric distress in the onset of the disease, and these quickly succeeded by evidences of profound cerebral affection, was compelled to apply to the train of morbid phenomena comprised under the term Yellow Fever, the appellation of Atypo. adynamic gastric fevers. He did not however rank it in the class of inflammatory diseases. Dr Dubreuil of Toulon describe it along with the Phlegmasiae as a Gastro-enteritis - regarding an affection of these latter structures as the primitive lesion in all cases of it. Boisseau, after an attentive consideration of all the symptoms observed during life, and the morbid lesions discovered by dissection, is induced, in accordance with the view of Broussais, to infer, that the primary morbid condition is located in the Gastro-duodenal mucous membrane. Having now adduced authorities in justification of the claim of Yellow fever to the rank of an Inflammatory affection, I shall endeavour, by an examination conducted on similar principles to those pursued by M. Boisseau, to establish the proposition, that Gastro-duodenitis is the original disease in all Bilious and Yellow Fevers; that this originates as the efficient cause of all the morbid sympathies that become developed in their course.

Dr Rush in his account of the Yellow Fever of 1793 affirms, that "the premonitory symptoms consisted in costiveness, a dull pain in the right side, defect of appetite, flatulency, perverted taste, heat in the stomach, giddiness or pain in the head, a dull, watery, brilliant, yellow, or red eye, dim and imperfect vision, a hoarseness or slight sore throat &c." Mark how clearly the most

observance of symptoms indicative of Gastric distress in the onset of the disease, and these quickly succeeded by evidences of profound cerebral affection, was compelled to apply to the train of morbid phenomena comprised under the term Yellow Fever, the appellation of Atypo. adynamic gastric fevers. He did not however rank it in the class of inflammatory diseases. Dr Dubreuil of Toulon describe it along with the Phlegmasiae as a Gastro-enteritis - regarding an affection of these latter structures as the primitive lesion in all cases of it. Boisseau, after an attentive consideration of all the symptoms observed during life, and the morbid lesions discovered by dissection, is induced, in accordance with the view of Broussais, to infer, that the primary morbid condition is located in the Gastro-duodenal mucous membrane. Having now adduced authorities in justification of the claim of Yellow fever to the rank of an Inflammatory affection, I shall endeavour, by an examination conducted on similar principles to those pursued by M. Boisseau, to establish the proposition, that Gastro-duodenitis is the original disease in all Bilious and Yellow Fevers; that this originates as the efficient Cause of all the morbid sympathies that become developed in their course.

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prominent of these precursors evince the departure of the Stomach and duodenum from their normal type. The anorexia, pain and uneasiness accompanied with a sense of heat in the Stomach and right Hypochondrium, depraved taste, yellow aspect of the Conjunctivae are all characteristic of incipient irritation in the lining membrane of these structures; and at the same time, as regards the evidences of Cerebral disorder, observe the intimacy of the connexion subsisting between these organs; so intimate in truth that the secondary effects are almost co-equal and co-extensive with the symptoms marking the primary lesion.

Again, when passing in review the different organs and structures of the body, analysing them severally with a view to determining the comparative frequency in which, and extent to which, they were affected in this epidemic, the Doctor remarks, "the Stomach and bowels were affected in many ways in this Fever. The disease seldom appeared without nausea or vomiting. In some cases they both occurred for several days or a week before they were accompanied by any fever. Sometimes a pain, known by the name of Gastrodynia, ushered in the disease. The Stomach was so extremely irritable as to reject drinks of every kind. Sometimes green or yellow bile was ejected on the first day of the disease by vomiting; but must oftener it continued for two days without discharging any thing from the Stomach, but the drinks which were taken by the patient."x Now if symptoms are truly to be estimated, as I conceive they should be, in the light of the language of suffering or diseased organs — of signs whereby they

x Med. Inquiries Vol 3d p. 109

announce to the Physician their departure, under the influence of morbific agents, from the normal or healthy state, surely the voice of the Stomach & Duodenum is vociferous enough, one would suppose, to arrest the attention of any Physician, however obtuse his sensibilities – however clouded his intellect by attachment to system, & compell him to the adoption of such medicinal means as would tend to their relief. Be it moreover remarked that these symptoms of gastric disturbance discovered themselves in many cases several days antecedently to the development of febrile reaction. It was not until the primary irritation had attained a degree of intensity sufficient to implicate the Heart's action, that the phenomena constituting fever became manifested. Now it is well established, that in many Exanthimatous affections, take for example Rubeola & Scarlatina, the specific principles originating these forms of disease make their first impression upon the most highly organized structures that exist in immediate relation with external influences, as the mucous membrane of the eyes, nasal fossae, trachea, bronchiae &c in the former case & in the latter the tonsils &c – moreover, that from these parts, a morbid modification is propagated to all the different organs of the economy, which respectively experience alterations in their vital condition proportional to the extent of the modification impressed upon the primitive recipient of the morbid poison & to the degree of their vital susceptibilities; – and that in virtue of this mechanism the Heart is irritated, is roused to increased activity attended by all the phenomena constituting the febrile state

and that consecutively the cutaneous eruption becomes developed. Should we be justified in these cases in referring all the modified acts to the Fever, or to the Cutaneous inflammation as the classification of many Nosologists would lead us to infer? When febrile reaction occurs subsequently to an external inflammation, the effect of the infliction of a wound, do we ascribe the whole series of abnormal acts to the supposed entity – fever? When, in consequence of the contact of a specific poison with the lining membrane of the Urethra, symptoms of Gonorrhoea, followed by fever, present themselves, would it be sound philosophy, think you, to regard this last condition as the origin of all the morbid manifestations? Why then, let me ask, exile Yellow fever from the list of the Phlegmasiæ & endeavour to silence objections, by asserting on insufficient & unsatisfactory principles, that its phenomena are the product of a peculiar entity fever? Truly an ignorance of the sequence, according to which morbid changes are effected in the Economy under different modifying influences must be the source of conclusions so false & absurd, or the beneficial effects of analogical reasoning in frequently conducting to sound & rational inferences must be lost to men who promulgate doctrines so futile & unintelligable.. So strongly confirmatory is the above testimony of the Gastro-duodenal Pathology of Yellow fever, that the decision of the question might almost be rested on it alone, but the mind of man is never so difficult of access to truth, as when it is presented arrayed in the garb of simplicity. So powerful, so absolutely indomitable is the principle inherent in his

very natural for that which is marvellous & incomprehensible, to the rejection of that which is devoid of mystery & capable of accounting satisfactorily for all the existing phenomena -

But it is from Autopsic inspections, that we derive arguments more abundantly corroborative of the view here advocated of the Pathology of Yellow fever. In all cases where the fever has been at all protracted — where the vitae energies of the individual have not been immediately annihilated by the overwhelming effects of the morbid poison, & time has been allowed for the inflammatory excitement to effect an alteration in the Anatomical characters of the parts affected, the Stomach & Duodenum invariably exhibit, post mortem, the consequences of a violent inflammation in their structures. Doctors Physick & Cathrall relate as the result of their investigations after death in the epidemic of 1793 that "the Brain in all cases was found in a natural condition. The viscera of the Thorax were perfectly sound. The Stomach & beginning of the Duodenum were the parts that appeared most diseased. In two persons who died of the disease on the fifth day the villous membrane of the Stomach, especially about its smaller end was found highly inflamed; & this inflammation extended through the Pylorus into the Duodenum, some way. The inflammation here was exactly similar to that produced by acrid poisons, as by Arsenic. —— The bile in the gall-bladder was quite of its natural colour, though very viscid. —— In another person who

died on the eighth day of the disease, several spots of extravasation were discovered between the membranes, particularly about the smaller end of the Stomach, the inflammation of which had considerably abated. Pus was seen in the beginning of the Duodenum & the villous membrane at this part was thickened. —— In two other persons who died at a more advanced period of the disease, the Stomach appeared spotted in many places with extravasations, & the inflammation disappeared. —— The Stomach of those who died early in the disease was always contracted; but in those who died at a more advanced period, when extravasations appeared, it was distended with air. —— The Liver was of its natural appearance. — All the other abdominal viscera were of a healthy appearance"*

Again Dr Physick affirms as the results of numerous dissections made at the City Hospital during the prevalence of the Epidemic of 1798 that "in all of them the Stomach was inflamed. The Brain in a few instances, discovered marks of inflammation. The Liver suffered but little in this disease"†

Here then we have clearly delineated all the Pathological changes that the cadavers of the victims of this malady presented in their most important organs. Discriminating judgement & accurate observation are traits well known to be possessed by the reporters of them. The facts are then the more valuable from the known excellency of their source, & from the clearness & perspicuity with which they are portrayed. An attempt to analyse them with

* Rush's Inquiries Vol 3rd page 172

† New York Medical Repository, Vol 5th page 129.

the view of imparting greater weight to their evidence would be alike unprofitable & unnecessary. The conclusions deducible from them are positive in their nature & calculated to silence the objections of the most stubborn & refractory Ontologist. The incomparably greater frequency & greater extent that the gastro-duodenal structures, considered relatively to the other organs, disclosed to the Anatomist marks of profound disease, an circumstance in evidence of their being the primary pathological condition, that Cavilling Physicians wile in vain affect to disregard. Even Dr Rush himself, impressed with their force, was obliged to advance a hypothesis in explanation of them closely approximating the view herein entertained. He arrives at the conclusion that the morbid appearances should all be considered as effects only of a stimulus acting upon the whole system, & determined more or less by accidental circumstances to particular viscera. Perhaps the stimulus of the miasmata determines the fluids more violently in most cases to the Liver, Stomach, & Bowels, and thereby disposes them more than other parts to inflammation & mortification, and to similar effusions & eruptions with those which take place on the Skin". A determination of blood to the Stomach & Duodenum is maintained throughout this Thesis to be the primary link in the chain of abnormal acts developed in Yellow Fever. As a consecutive effect of this Lesion, the Liver must experience an irritation, in virtue of the intimate sympathetic relations, by which all the glandular organs are united to the mucous membranes upon which their excretory ducts open, & to which modern

+ Rush's Inquiries Vol 3rd page 167.

investigators have demonstrated them to be mere appendages. It is from the constant observance of accompanying signs of Hepatic irritation in Bilious fevers generally, that Dr Rush, conjointly with most authors of this Country, view this organ as the primary seat of lesion, & the evidences of gastric disturbance as consecutive phenomena. The fallacy of this opinion is at once disclosed by an acquaintance with the anatomical & Physiological relations of these parts. Precisely as are the Salivary glands implanted upon the mucous membrane of the Buccal Cavity, are the Liver & Pancreas engrafted upon the membrane lining the Duodenum; the mouth of their excretory ducts open directly upon it; they are traversed by & consist essentially in a prolongation of this membrane, & they enjoy in consequence of this arrangement the closest possible sympathy with it. We all know that as the food impresses the lining membrane of the Mouth, the Salivary glands are excited to immediate & violent action, and that Masticatories & other irritating articles affect them still more energetically. Now the experiments of Bichat* & the observations of other more recent experimenters, demonstrate incontestably that as the Chyme escapes the Pyloric orifice of the Stomach, & is in the act of traversing the Duodenum, the Liver & Pancreas are aroused to a profuse discharge of their respective secretions — thus contributing their agency to the accomplishment of the digestive function. We must also presume that they experience an analogous modification to the Salivary glands, when they become subjected to an excitation but moderately transcending in degree their natural stimulation. This accounts for the appearance of an

* Anat. generale de Xav. Bichat, tom iv p. 6.

augmentation of the biliary & panchreatic secretions in certain conditions of the system. It is moreover an established law that all Glandular apparatuses have their secretory acts arrested when they are submitted to any intense irritation as witnessed by the Kidneys &c. Hence the suspended function of these two glands the L & Pancrea, when a violently exciting substance acts upon the surface of the Stomach & Duodenum, and its influence is transmitted by continuous sympathy to these organs. Still further confirmatory of this intimate union of parts I remark, that when Poultry are gorged with highly irritating food, & a gastro-duodenitis is induced, their Livers become inordinately large & hypertrophied. The same abnormal condition of Liver succeeds to the practises of gourmands of our own species, & after death inflammation of the Duodenum &c is exhibited co-existing with this state. A corresponding mechanism may be observed in the circumstances giving rise to the developement of Orchitis in many cases. The inflammation of the lining membrane of the Urethra traverses along the vas deferens, & thus produces inflammation in one or both Testes.— These considerations, supported by the anatomical, physiological, & pathological connexions of these parts, compell us to admit that all cases of disordered function of the Liver or Pancreas & all alterations in their organic structure, excepting those of a traumatic character, are secondary to an irritation or inflammation located in the gastro-duodenal mucous membrane. I confess I am ignorant of any well established principle either in Physiology or Pathology by which this proposition can be controverted. Let us consider for a moment the

grounds on which is predicated the doctrine of primary hepatic disturbance. An individual is presented with extreme irritability of the stomach, & prompt ejection of every substance that is introduced into its cavity, especially warm drinks ;— but no Bilious fluid is expelled by company with the ejecta substances. Notwithstanding that these symptoms clearly testify the existence of a forcefully irritating agent in the stomach, the Practitioner infers a lethargic condition of the Liver. The patient also experiences a sensation of weight & oppression in the right Hypochondriac region, and perhaps violent colicky pains here. He in addition discovers extreme sensitiveness to pressure over the locality of the Liver. These circumstances materially strengthen the inference of the existence of Hepatic torpor, & suggest the idea, that this condition of the Liver is the primary & efficient cause of all the morbid symptoms. When the remedial agents, administered with the view of exciting the activity of this organ & of arousing it from its state of inaction, have in the emesis & cathartic produced, caused an appearance of the Bilious fluid, & there follows an immediate alleviation of all the symptoms, the presumption that the former absence of this secretion had induced all the morbid phenomena becomes established beyond a question. Thus when the Blood-letting has exerted its beneficial agency upon the follyculated surface of the stomach & duodenum, & the emeto-cathartics in conjunction with the antispasmodics have relieved the structure of their irritating contents — when by these measures has been removed the inflammatory condition, which in reality produced the suspension of the secretions, & there immediately succeeds an amelioration in the condition

* Illustrative in a high degree of the principles here advocated, I shall relate a case that very recently presented itself to my observation. A little girl, aged 5 years, had been struggling for several days under the influence of the Rubeolous poison in its latent state, as manifested by langour, loss of appetite, irritability of Stomach frequently complaining of sickness there, particularly after taking food together with the usual precursory Catarrhal symptoms. She had been labouring also for a long time under a Cough, a sequel of Pertussis, and her Lungs appearing to be considerably infarcted with mucus, I deemed it advisable to administer an Emetic for the purpose of relieving them. Accordingly, losing sight of the first mentioned symptoms, I prescribed to the little patient the very large dose of Ipecac. gr. vj. & Emet. Tart. grss. Its emetic effect was immediately produced, and it continued to operate with great violence for an hour & a half. Not the remotest semblance of Bile was discoverable in the matters thrown up. Less than two hours after its administration several large evacuations occurred by stool, consisting of a thin fluid resembling dirty water, and having suspended in it flocculi of mucus, and imperfectly digested aliment. Not the slightest trace of natural, healthy faeces, such as results from the due action of the Biliary and other secretions upon the excrementitious portion of the food could be observed. By these discharges the little patient was debilitated beyond measure. An eminent Physician, on seeing her & witnessing these circumstances, directed a small dose of Calomel & Chalk prep. This was immediately ejected from the

of the individual, then advocates of primary hepatic lision forsooth attribute the good effects of their medicinal means wholly to their operation upon the Liver. This view is maintained in direct opposition to all Physiologico-pathologicue considerations & to the results of post-mortem investigations. We may confidently aver that the cause of all the distressing symptoms in cases analogous to this is located in the Duodenum - that a violent stimulation is imparted to the Liver, either through the uninterrupted continuity of surface of its excretory duct with the duodenal mucous membrane, or through the intervention of nervous communications, & that the cessation of its functional acts is a phenomenon entirely consecutive to the gastro-duodenitis. - *

Let us now resume our analysis of the autopsic appearances that the accounts of other observers of Yellow Fever present. Dr James Johnson exhibits the results of the inspections of above an hundred bodies. It is asserted by the reporters of these, that the internal surface of the Stomach discovered irregular spots, patches, & streaks in a state of inflammation, gangrene, or sphacelus. - Sometimes large portions of the villous coat were destroyed, as if corroded by some acrid matter. It is further stated that the small intestines (without restricting the observation to any particular portion) were inflamed, & in many places approaching to the state of gangrene. Other organs sometimes manifested morbid appearances as the internal surface of the Oesophagus & the concave surface of the Liver." These latter are of inferior importance in our consideration owing to their moderate implication, & the less frequency of its occurrence relatively

* Johnson on Warm Climates page 239

Stomach, and it was considered an indication for abstaining from the further introduction into its cavity of irritating substances. A soothing plan, aided by revulsive measures, was then adopted. A mustard Cataplasm was applied over the region of the Stomach & after its action, was followed by frequently repeated emollient poultices. Under these remedial means her Stomach gradually became retentive, and her bowels calmed; Her discharges by degrees assumed their healthy character, passing through all the intermediate stages until they attained the solidity and characteristic appearance of healthy faeculent matter. Now I affirm that there was but one cause to which could be attributed the suspension of the hepatic function, and but one power by which it could produce its effect. The impression of a highly acrid & irritating emetic on the mucous surface of the Stomach & of necessity the duodenum - surfaces already in a state of great supra excitement is the only possible cause; and the mechanism of its operation on the Liver must have been the transmission of the irritation from the duodenum to this Organ through the medium of their nervous communications. With this explanation before us, permit me to ask the advocates of the doctrines I oppose, for what plan of treatment would the first peculiar evacuations have been received as an indication? You would have said we have here manifest signs of Hepatic torpor - the Liver is evidently locked. Calomel exerts a specific action on the liver. Therefore we must unlock it by the administration of Calomel. Accordingly you would have precipitated large doses of Calomel upon these already inflamed tissues, and the Stomach being unable to eliminate itself from this noxious agent

to the former lesions. Besides Pharyngitis & Oesophagites are usual accompaniments of violent inflammation of the mucous membrane of the Stomach, and as regards the marks of disease on the surface of the Liver, we can readily comprehend how, when the peritoneal investment of the Stomach became inflamed, as it not unfrequently must in this vehement grade of Gastritis, the inflammation should be propagated by Continuity of surface to the peritoneal covering of the Liver. In addition it is asserted in this report that in the cases of recovery "the Stomach gradually became retentive" - and that "some of them were afterwards invalided, in consequence of Dyspeptic complaints & generally disordered state of the Stomach & other abdominal viscera". Now in the very face of these facts, so strikingly corroborative of the gastro-duodenal Pathology of yellow fever, the Author advances a view of its pathology founded on his fanciful Theory of Cutaneo-hepatic sympathy. God be praised, that the period has now ~~already~~ arrived in the history of Medicine, when imaginations fairy dreams are no longer permitted to enter into the formation of the doctrines of a Science, so intimately connected with the dearest interests of humanity as the healing art. The elements of the doctrines of this Science now consist in propositions evolved from an analysis of the phenomena of the organism in its physiological & pathological states. These propositions have been repeatedly tested by the most infallible means, and have been thoroughly investigated, & clearly established by clinical & autoptical observations.-

Testimony, quite as conclusive in support of the opinion here

by vomiting on account of its great specific weight, you would in all
likelihood have precipitated into Eternity the little patient, already
greatly prostrated under the copious evacuations. I am really desirous
to consider the truth inculcated by this case to be as pregnant with
important practical results as almost any principle in Medicine.
Twelve or fifteen hours after the imprudent administration of this
emetic the Morbilleous eruption began to appear, and a blister being
applied over the Thorax to counteract a strong tendency that mixed
itself to fatal pulmonary congestion, it ran its course favourably -

advocated is afforded in the remarks made by Dr Eberle relative to the post mortem appearances. He says "the Stomach & Liver are the organs upon which the disease exerts its principal force. The former especially, always shows the strongest marks of previous inflammation & its consequences. Its coats are often thickened, & the mucous membrane is always strongly injected, abraded, & in many parts gangrenous, or totally disorganized. The duodenum & small intestines also almost invariably exhibit marks of inflammation. In many of the more aggravated cases, the liver undergoes much structural derangement &c"* This last circumstance is certainly a common phenomenon in warm climates, in the inhabitants of which there prevails so great hepatic predominance, & so remarkable a predisposition to Liver disease owing to peculiarity of Organization. But remember even here it is secondary in its nature.

Finally, to conclude my citations from authors, permit me to introduce the observations of Boisseau, which are based on the results of the inquiries of many distinguished practitioners in hot climates. All Physicians, says he, who have written on the subject of Yellow fever, agree in saying, that in the greater number of cases, the mucous membrane of the Stomach is of a more or less bright red, or of a brownish red, sometimes ulcerated, gangrenous, & destroyed in part of its extent, especially towards the Pylorus. These traces of inflammation are not less frequent in the duodenum; they are more or less prominent in the rest of the digestive canal, & especially in the great intestine."† Now, considering how perfectly these dis-

* Eberles Practice Vol 1. page 115.

† Boisseaus Physiologico Pyretology page 322

fevent authors harmonise in their accounts of their post mortem researches — how they correspond in refering constantly to the Stomach & Duodenum the principal pathological changes, and regarding them in connexion with the remarks previously made in relation to the signs premonitory of an attack of Yellow fever, & the prominent symptoms presented after the full developement of all its characteristic phenomena, we are impelled to infer that a local determination of blood to these organs is the primitive morbid condition; - is the original link in the catenation of morbid actions which constitute the fever. Nay more, we are compelled to conclude that Yellow fever consists essentially in a violent Phlegmasia of the lining membrane of the Stomach & Duodenum, and that upon it is dependent all the disturbances evinced in the other organs. We are informed that the symptoms preceding this disease are such as testify a derangement in the functional acts of these structures — that, in accordance with the progressive intensity of these symptoms, we have a corresponding augmentation in the violence of the other phenomena — moreover, that the progress towards a favourable termination, is marked by a gradual cessation of the gastro-duodenal irritation, & by a gradual return of these organs to their natural healthy condition, and finally that in fatal cases we have exposed, on autopsy, unquestionable evidences of these structures having been submitted to the most intense disorganizing process. Their component structures are completely broken up; - the vessels ramifying through them are distended with fluids almost to bursting, & their cavities exhibit to view a morbid

secretion always the product of the most violent vascular excitement.

The next conclusion to which we are of necessity impelled by the admission of the accuracy of the proposition advanced above is that Bilious remittent fever should also be ranked among the affections of the Gastro-duodenal mucous membrane. This inference is predicated upon the universally admitted fact that Bilious fever is identical in its essence - is perfectly analogous as regards its nature & important characters with Yellow fever. Tommasini, observes Boisseau, adopting the opinion of Pringle, Lind, Mosely, Pinel & Mr. Rubini, remarks that these ~~symptoms~~ fevers have the same symptoms, differing only in degree; that the same organic lesions are found in them, & that the causes & circumstances which produce them, or favour their development are the same.* x During the prevalence of the more aggravated of the two affections there is invariably observed in the same locality & in different individuals a coexistence of the milder form too; - the action of the predisposing causes, degree of activity of the exciting agents & other adventitious circumstances influencing the development of the one & the other. Besides the difference between a mild attack of Bilious fever or such as is characterized by irritability of the Stomach & terminates occasionally in slight discoloration of the Skin, and between Bulam or Yellow fever is surely not greater than what another disease is daily presenting to our observation. Thus Scarlatina will attack one patient in a form so mild that but for the subsequent desquamation of the cuticle, it would be difficult to detect its existence. Another will have vivid eruptions & high phlogistic symptoms; while a third exhibits a low, putrid malignant

x Boisseau. Pyretol page 327.

plague with gangrenous sore throat, & scarcely any eruption at all - No one thinks of doubting the identity of the disease in these three conditions - Post mortem observations, during the past summer at the Balt. Infirmary of victims to the more violent grade of Bilious fever, afforded ample & sufficient testimony confirmatory of the gastro-duodenal pathology of this disease; - & this too in cases when the fever had persisted but a short time. It will be needlessly asserted that this condition of the Stomach & duodenum, which has been conclusively demonstrated, I conceive, to be the primary lesion in Bilious & Yellow fevers, is in character different from that which is usually recognised as constituting a Phlegmasia. He reply, quoting from Broussais, that every irritation, whatever be its degree, must be termed phlegmasia, when it accumulates the fluids to any extent in the capillaries". "In fact whether the Phlegmasia be excited by an alternate sympathy which forces the organ to a supplementary action, as when the mucous membrane of the Lungs inflames in supplying the functions of the Skin; or when they result from an immediate stimulation; as we know that poisons may produce gastrites, we see them at first, exaltation of local susceptibility, & in consequence, accelerated action, accumulation of fluids, & augmentation of temperature. The vital phenomena are then in excess".x

As the result of these investigations it has surely been incontestably established, that the series of morbid phenomena characterizing Bilious Remittent & Yellow fevers are subordinate to an abnormal condition of the gastro-duodenal lining membrane. The original affection is not maintained to be an inflammation in the first instance; - but

x Broussais. Chronic Phlegmasiæ Vol 2nd p. 132

that an augmented irritability – an exaltation of the vitality of these parts, comprises the first link in the chain of morbid acts, the tendency of which is under the influence of fresh irritating causes, or inappropriate remedial means to terminate in violent inflammation, sphacelus or gangrene.

## Causes of Gastro-duodenitis.

The Etiology of all diseases is proverbially that department of medical science which is enveloped in the greatest obscurity. The plan contrived & the means employed, by the sovereign Author of our frail nature, in producing the disease & finally effecting the destruction of the animal body, are of a truth sufficiently wonderful & marvellous, but the exact nature of these morbific agents, & their precise modes operandi on the system appear to be involved in still greater darkness. These latter agents too closely allied to & too nearly connected with final causes, to be revealed by our limited intellect, & their effects are our only source of information in inquiries relative to their nature. From these low, even most valuable knowledge can be derived. Brown established the important truth, that animal existence is alone maintained by the operation upon its vital structure of Stimulants, or the Physical agents which surround it. But these same agents, so indispensable to life, possess the property also when operating either with an augmented or diminished energy, of perverting its vital acts – of destroying the balance of its excitement & of causing its dissolution. Thus from the moment that Life commences – from the moment that the vital principle becomes imparted to the molecules constituting the animal organism, a ceaseless & unrelenting warfare is entered upon

between the laws controlling the acts of Life, & those termed physical & chemical laws; and this contest is maintained with greater or less virulency throughout existence, until the scene is finally closed by the supremacy that the latter attain over the former. To enable the economy to resist these influences all organized beings enjoying the prerogative of Life have implanted within them, & incorporated with their nature, a principle of vital resistance, a sanative power - the office of which is to counteract the tendencies of inorganic matter, & to resist these injurious impressions by restoring to the different organs their natural degree of excitement when this is disturbed, & by reinstating them in the performance of their healthy acts. - In this way is the vital economy enabled for a period to protect itself against the destructive instruments that keenly hostile at it.

The causes of disease are usually considered under the division of the predisposing or remote & exciting & Of these, remote morbific agencies, it is admitted that some are peculiarly disposed to exercise their action upon certain organs or sets of organs in preference to others. Thus a depressed state of atmospheric temperature accumulates excitability in the Respiratory organs - an exalted degree of the same exerts this morbific influence ~~more particularly~~ upon the whole Tegumentary system, but more particularly upon the portion prolonged upon the digestive Apparatus. These agencies may be so modified by additional circumstances, as morbidly to modify the vital properties of one portion of these apparatuses to the exclusion of others.

Atmospheric heat combines with humidity concentrates its action upon the colon, accumulating excitability there & inducing a predisposition to Colitis or dysentery. All authors, says Bronssais, who have written upon dysentery, have placed warm & moist air at the head of the causes of the disease. So also is there a special atmospheric constitution the action of which is to affect abnormally the vitalism of the stomach & duodenum. The special nature of these modifying circumstances is one of the unrevealed secrets of nature. It is generally conceded however, that at certain periods there becomes diffused throughout the atmosphere particles of a character so obnoxious to the system, that, when introduced into it, tend to impress certain changes upon the vitality of individual parts - to augment their susceptibility, & to dispose them to react more energetically than usual to the impression of their accustomed excitants.

The most popular opinion is that these morbific agents, whether exhaled from the animal body in a state of disease, or emanating from the humid decomposition of animal & vegetable matter combines, or from whatever other source proceeding, obtain admission into the system through the channel of the pulmonary apparatus. That these agents enter the circulation, & are conveyed along with its current into the most intimate textures of the organism. Some, the irritating properties of which are feeble, circulate directly to the emunctories of the system by which they are rejected. The more noxious class doubtlessly first impress the nervous system generally, but their deleterious influence is wholly or almost wholly exerted upon those organs, either for which they possess a particular affinity, or which are most predisposed

to a local determination. Let us elucidate the action, according to these principles, of the predisposing causes of Gastro-duodenitis. Atmospheric heat operates upon the general nervous system, but especially increases the irritability, & diminishes the powers of vital resistance of the intimate prolongation of this system. This agent, modified by the influence of other agencies, whether Thermometrical, Barometrical, Hygrometrical, Electrical, or Malarious in their nature I know not, accumulates susceptibility in the lining membrane of the Stomach & Duodenum, - diminishes their tone, & induces a disposition in them to respond more actively than consistent with health to the impression of their healthy stimulants. Thus it happens that those substances, which in a normal condition of these tissues bear a direct relationship with their excitability, - stimulating them to the performance of their healthy acts, become possessed of properties highly irritating & injurious. Consequently any agents, which tend either primarily or secondarily to irritate & stimulate further these already irritable structures, may be the exciting causes of Gastro-duodenitis in some of its forms. The exciting causes are capable of producing this effect manifested by the predisposing, but the latter & causes do not possess the same prerogative. Upon these considerations, Broussais has founded a precept of useful application as a salutary prophylactic measure. If men, says he, always took care to diminish the quantity of excitant applied to their gastric surfaces, in proportion as the Stomach acquired a greater liability to be affected during summer & in warm countries, until they became acclimated, they would always avoid phlegmasia.

*Symptoms of Gastro-duodenitis.*

Bichat, having demonstrated the existence in the animal economy of two distinct systems of nerves, viz. the nervous system of Organic or Vegetative Life & that of Animal Life, and conceiving that all the vital acts were referible to the agency of the nervous influence, recognised also two great orders of vital phenomena — one constituting the functions of Organic Life, or those dependent for their manifestation on the Ganglionic system; the other denominated the functions of Animal Life, or, as since styled by Broussais, the functions of Relation, which are subordinate to the Cerebro-spinal nerves. Broussais, following up these ideas of Bichat in his elucidation of the doctrine of Irritation, & establishing the proposition that the nerves are also the efficient agents of the transmission of irritation from one organ to another, inferred the existence of two orders of morbid phenomena or morbis sympathies. The first are manifested by Organic phenomena viz; increased action in the fibres, congestion, alterations of the secretions, exhalations, & absorptions, which are their accompanies, diminished or vitiated by changes in the temperature, & by vices of nutrition; these are the organic sympathies; — the second are manifested by pains, convulsions of the voluntary muscles, & by mental aberration; these are the sympathies of Relation.* I deem it unnecessary to enter into an examination of the question, whether the nervous tissue is or is not the channel whereby irritative impressions are communicated from a single focus of inflammation to other organs. The affirmation of the question would seem to be placed beyond the reach of objection

* Broussais. Pathology. prop 86.

from the circumstance that it is based upon the physiological acts of the nervous tissue

In analysing the symptoms pathognomonic of Gastro-duodenitis conformably with this natural division, the first order of morbid phenomena are the sufferings evinced by these structures themselves independent of any complication; the second order comprises such functional disturbances as proceed from an implication of those organs or structures over which the Ganglionic nerves preside, and the third order comprehends those symptoms which are considered characteristic of an irritation developed in Organs, the actions of which are regulated by the Nervous Centres of Animal Life.

The first indications, usually presented to us as precursory of the Gastro-duodenal disease, are such as denote an augmented irritability in the mucous lining of these parts, as loss of appetite & strong repugnance to all kinds of food, especially those of a stimulating character, distaste for warm exciting drinks, & desire for those of a cool & acidulous nature — an indescribable sense of uneasiness & weight in the praecordial region on the introduction into the Stomach of even such aliment as formerly was digested with facility. These structures still more clearly proclaim their inability to accomplish digestion properly by a slight nausea after the ingestion of aliment. During this state of labored digestion headach is experienced. The epigastric uneasiness is augmented to a sensation of pain, which is seldom referred to the epigastric centre, but usually to the middle & anterior part of the chest under the Sternum & false ribs. Many complain of a

feeling of internal heat in the whole of the central part of the throat. After the accomplishment of digestion the individual remains feeble & incapable of active exertion. If the irritating regimen is persisted in these symptoms are gradually aggravated & others become superadded. Sympathies both Organic & Relative are more clearly developed. Corresponding with the headach & the pain referred to a degree to the epigastric region, there is a sensation of heat & fatigue in the muscles & articulations. These symptoms testify the propagation of the irritation to the Brain & Spinal axis, through the medium, on the one hand, of the pneumogastric nerve which communicates directly with the Encephalon, & on the other through the nervous filaments of the ~~ganglionic~~ great Sympathetic, which are intimately connected with the nervous chords proceeding from the Spinal Centre. As a consequence also of the first phenomenon the mental manifestations are imperfectly executed - the judgement is weakened - the memory is impaired, & the the relationship of the external senses to their natural excitants ~~is~~ is altered. As the effect of the latter condition, are experienced the Lumbar pains & the Contusive sensations in the Locomotive apparatus.

Soon prior to the development of these sympathetic phenomena in the organs of animal life, the organic sympathies, of parts holding the relationship to the surface of the Stomach & Duodenum of immediate continuity, become awakened. The secretion of the mucous crypts of the tongue & fauces is altered in its sensible properties. A white coat covers their surface. A dry, clammy ~~taste~~ & bitter

taste is experienced by the individual. The large glandular organs directly implanted upon the Duodenum. the Liver & Pancreas, have their organic sympathies very soon aroused under the influence of the gastro-duodenal excitement. These soon feel the extension of the irritation to their structures. Their secretions are altered in quality, diminished or augmented in quantity, according to the varying intensity of the primary irritation. In this sketch is delineated the series of morbid phenomena designated Gastric Embarrassment. The Heart is seldom affected in this variety of Gastro-duodenitis except during the act of digestion.

Often after these phenomena have continued some days, one or more weeks, or even a month on the ingestion of some actively irritating article of diet, or the operation of other influences, nausea is produced, & the instincts of these organs make a demand upon the Brain for the cooperation of the Diaphragm & Abdominal muscles in order to effect the expulsion of the offending cause. Then there immediately ensues an aggravation of all the above sympathies both organic & relative. Preceding the vomiting however there generally occurs chills or rigors, in consequence of the centripetal direction which is given to the fluids, & their concentration upon the internal organs. The pulse is small & contracted. Soon the Heart recovers its powers - is roused to a more violent effort & reaction is developed. The skin is Dry, & becomes the seat of a burning pungent heat; the pulse becomes frequent, full & hard; the thirst; anorexia, disgust for food, & bitterness of the mouth augment; the

patient desires cold & acidulated drinks; he experiences more violent pain in the head, particularly in the frontal region; the sense of lassitude & contusive pains in the back & lower extremities are so great that they can no longer sustain him. Entirely occupied by these sensations, he sometimes scarcely perceives the pain he at first felt at the ensiform cartilage; but when the slightest pressure is made upon this part, he shows by his complaints, that the pain has not ceased. The tongue becomes dry & manifestly red at its edges & at its point; it is more thickly coated; a yellowish tint more or less deep is spread over the whole surface of the body. The patient, more irascible than usual, does not sleep, or his sleep is interrupted & is not refreshing. After the continuance of these symptoms for a longer or shorter period the febrile action of the pulse & the morbid heat of the skin undergo a manifest diminution, accompanied by an imperfect subsidence of all the above mentioned symptoms. In other words we have a remission. This assemblage of phenomena constitutes the first paroxysm of an attack of Bilious Remittent fever.

Upon the morning succeeding the day upon which the remission occurs, it reappears. It generally commences about the back, and is accompanied with trembling and a sensation of chillness. This stage is attended by smallness & concentration of pulse. Then returns the dryness, the pungent heat of the skin & the thirst; the face becomes red & animated; the pulse resumes its force & hardness, and after the lapse of half an hour, or one or more hours, the surface becomes moist without losing the character of pungency, which distinguishes

it, and the patient finds himself nearly in the same state in which he was before the paroxysm, which with more or less intensity is repeated under the Quotidian, Tertian, Quartan, or double Tertian type, and sometimes under an irregular type. These paroxysms are repeated, before the favourable or fatal termination of the disease, a variable number of times, according to the treatment pursued & the complications induced. A tendency to a favourable issue is evinced by the gradual restoration of all the organs to their normal state. The activity of the pulse is diminished, the heat and dryness of the surface are replaced by a general diaphoresis, warm & mild to the touch; the discharge of the urine is augmented in quantity and natural in quality, depositing on standing a very considerable sediment. The most encouraging of all the flattering signs, is the return of the tongue to its ordinary healthy state. In all cases of gastro-duodenal affections the disappearance from the tongue of its morbid character may be regarded as the surest indication that all the organs are becoming re-established in their normal condition. In cases when from improper treatment or other causes, the malady tends to a fatal result, the complication that most frequently occurs, and which favours most this issue, is that of the encephalon. Indeed so intimate is the connexion subsisting between the upper portion of the alimentary canal and this viscus, that in all affections of the former, especially in that form resulting in Bilious fever, sympathetic suffering of the Brain

is very soon declared. One of the earliest & most prominent symptoms is an intense pain, sometimes confined to the frontal sinuses, at others occupying the anterior region of the Cranium. Conjoined with the cerebral pain, which is sometimes intolerable, there exists an extreme sensibility of the organs of sight & hearing, and often delirium. These symptoms announce a dangerous complication, the extension of the irritation to the encephalon; and if under the absurd belief that because these phenomena are sympathetic they may be disregarded, or ignorant of the Law that transmitted irritation is in nature essentially identical with the primitive, the Practitioner should neglect to resort to a special treatment for their removal, evidences of a more profound implication of this organ will soon manifest themselves. The characteristic features of ataxia soon will supervene. The delirium becomes noisy and furious - the sensibility of the senses is exalted - the organ of vision becomes acutely sensible to the impression of light - sounds powerfully affect the auditory sense - the patients propensity to talk is indomitable - he answers quickly to all interrogatories - we observe also convulsive movement of the face and often too in the muscles of the members, subsultus tendinum, carphologia &c. From this state of supra-excitement of the Brain, the patient relapses into the adynamia condition - a condition indicative of a defect of innervation. He is deaf & tranquil, and this condition is joined to a state of stupor more or less profound; the sensibility of the senses is obtuse; when questioned he answers reluctantly or not at all, at the same

time the muscular system is prostrated, the urine accumulates in the bladder, the ejections take place involuntarily.

The labors of Lallemand authorise us to think that in the first case, the irritation is confined to the meninges & surface of the Brain, whilst in the second the substance itself is affected. * The Brain rarely resumes its integrity after such manifestations of its profound inflication, and the patient succumbs.

Such is the train of morbid sympathies succeeding to gastro-duodenitis as it occurs annually in our own county during the autumnal season. When however the Modifiends operate on the system more suddenly, and with greater intensity; when the invasion is made unexpectedly, and with considerable vehemence, a more alarming series of phenomena is the consequence. Owing to the impression of the morbid poison in a state of peculiar concentration, or other circumstances, the nature of which is inappreciable to us, a sudden and violent focus of irritation is lighted up in the gastro-duodenal mucous membrane - a centripetal direction is forcibly imparted to the circulation - an overwhelming affluy of blood takes place to the internal organs, and the vital forces of the individual are not unfrequently immediately annihilated. Or if the vital energies are enabled to react under the weight of this determination to the cavities, and there is in consequence effected a more general diffusion of the fluids throughout the organism, a temporary remission will occur. Unless the most energetic measures are in the mean

* Gonfil: Expose. p. 269.

time adopted to prevent a recurrence of the internal congestion, the distressing symptoms resulting from this condition will be repeated with increased severity, and all the phenomena of fatal collapse will supervene. This constitutes the congestive form of Bilious fever.

Another complication of frequent occurrence with gastro-duodenitis under a modified atmospheric constitution, is an affection of the Pulmonary viscera. "This variety of the disease occurs during cold and variable seasons, in districts abounding in sources of miasmatic exhalations. It appears to be the result of the combined agency of Zymo-miasmata & atmospheric vicissitudes." Under these circumstances then, we have engrafted upon the lesions above mentioned as consecutive to gastro-duodenitis, symptoms marking a morbid state of the Lungs. This modification comprehends the disease to which has been appropriated the appellation of Pneumonia Biliosa. Its initial symptoms are identical with those already considered as premonitory of gastro-duodenitis. After these have continued for an uncertain period, or even some days after the development of the more active symptoms, the supervention of the Pulmonary irritation becomes manifested. This discloses itself either by a more or less severe and pungent pain in the chest, which is aggravated by the respiratory efforts, or the sensation is obtuse and attended with a sense of weight and oppression in the Breast- differences depending upon the portion of the pulmonary structures that becomes involved. The

expectoration is not very copious; the sputa being of a frothy yellowish appearance, marked frequently with streaks of blood. The supervention of this complication will of necessity influence materially the progress of the disease, and will exact at the hands of the Physician a treatment specially in reference to it.

In the affection denominated Cholera morbus, the gastro-duodenal lining membrane is the primitive seat of lesion, and the forces whence radiates to all the organs, the sympathetic influence to which is to be ascribed the functional disturbances manifested by them. The most prevalent opinion in this country relative to the causation of this malady is, I am conscious, greatly at variance with this view. The explanation, deemed satisfactory by the majority of Physicians, and which many have adopted from a sentiment of reverence and respect for the promulgator, is founded on the hypothesis advanced by Dr Johnson of Cutaneo-hepatic sympathy. Dr Eberle thus accounts for the phenomena. When the cutaneous and hepatic functions, while in a state of inordinate activity, are suddenly arrested by the influence of Cold, the blood retreats from the surface to the internal vessels; the portal circulation becomes engorged, and the capillaries of the mucous membrane of the bowels strongly congested. This increased or engorged state of the capillaries of the mucous membrane of the alimentary canal, gives rise, we may presume, to morbid irritability of this structure, and consequently to the characteristic phenomena of the disease." x This last remark is undoubtedly

true, but we are not I apprehend to regard it as a condition secondary to, and depending upon Hepatic torpor. Dr Eberle himself in his preceding remarks evidently exhibits marks of skepticism as to the soundness of this view. I shall quote the queries suggested by these doubts. But how, he asks, are we to account for the extreme irritability of the stomach and bowels, and the excessive vomiting & purging? Can hepatic torpor, and congestion in the portal system of vessels give rise to this morbid condition of the alimentary canal? Or are we to consider the state of the Liver and the general engorgement of the portal vessels, only as a concomitant phenomenon, and in no way causative of the characteristic gastric and intestinal affections?". In the very face of the difficulties thus opposed to his doctrine, of primary hepatic disturbance by the early occurrence of the gastro-duodenal irritation, he contents himself with the hypothetical assertion that "torpor of the Liver and congestion of the Portal circulation exist, and these he considers amply competent to develop all the symptoms of Cholera morbus. Surely Dr Eberle would not have maintained this absurdity had he understood, and fully appreciated, the strong bond of sympathy uniting the Liver to the Duodenum, and had he been acquainted with the innocious nature of the retained perspirable matter which he makes to play so active a part in the causation of very many diseases; especially when their etiology is involved in some obscurity. A current of cold air doubtless may act as a remote cause of this disease by modifying the vital condition of one portion

of the capillary surface - this modified condition being reflected through the medium of the sympathies upon the Stomach & Duodenum, in which excitability is largely accumulated, and which are strongly disposed to take on morbid action. The rationale of the process, by which the current of cold effects its morbific influence under these circumstances unquestionably is, that it induces a modification in the vitality of one portion of the Cutaneous surface, and the impression of this is sympathetically transmitted to the irritable mucous membrane of the Stomach & Duodenum, which present the antecedent and chief marks of a departure from the healthy state. But the most frequent modifiers in this disease, and which are capable of producing it independent of a prior predisposition, are indigestible and irritating articles of diet. There most generally however prevails in these structures before an attack, a state of erythism, and a consequent propensity to respond with activity to the action of morbific causes. These views relative to the Pathology of Cholera morbus are further confirmed by Autopsic inspections. These examinations discover as an invariable result, when the disease has continued a short time, traces of inflammation on their internal surface; consisting in "large patches of highly injected and dilated vessels". On opening the body, says Boisseau, the mucous membrane of the colon, Duodenum and Stomach is found thickened, vividly red in some points, of a brownish red and sphacelated in other points; the alimentary canal is often wonderfully contracted; these circumstances according to the remarks

of M. Geoffroi, banish all doubts with regard to the inflammatory nature of Cholera".*

The invasion of gastro-duodenitis in that form, which has obtained, for its peculiar characters, the appellation of Cholera-Morbus, is almost always sudden & proportionately severe. The premonitory signs indicative of the existence of an irritable condition of the lining membrane are seldom clearly defined or fully developed. The symptoms that usually usher in its attack are an indescribable and overpowering sense of anxiety in the epigastric region - extending in the direction of the right Hypochondrium, accompanied with a feeling of heaviness and oppression there, an internal sense of heat and an exceedingly distressing nausea. This nausea and sense of uneasiness are soon succeeded by violent vomiting, and racking pains in these parts - with all attended by extreme sensitiveness to pressure. The irritation is soon propagated to all the parts in the immediate neighbourhood of the affected organs. Manifestations of Enteritis and Colitis soon become superadded to the gastro-duodenitis. Alvine evacuations occurring momentarily add to the already distressing condition of the patient by the pain and tenesmus that attend them. The investing membrane of the diaphragm also discloses its participation in the inflammation by incessant hickuping. The Locomotive apparatus evinces signs of the propagation of the irritation to the locomotive bundles of nerves contained in the Spinal canal, by the Tonic or Clonic spasms with which the muscles are affected. Energetic and painful

* Boisseau's Physiol. Pyretol. p. 112.

contractions of the abdominal muscles also prevails. The heart is now roused to forcible and frequent contraction. If immediate relief is not afforded by the successful application of very active medicinal means, indications of an accumulation of the vital fluid in the abdominal cavity are very soon manifested, and collapse closes the distressing scene. Such is Gastro-duodenitis as it is occasionally produced through the agency of powerful morbific causes. Sudden in its onset, violent in its effects and too frequently fatal in its result.

The signs, usually considered pathognomonic of Acute Hepatitis, are identically those which Duodenitis either alone, or combined with Gastritis is productive of. At least this assertion is susceptible of the fullest demonstration as regards the majority of those cases which Physicians diagnosticate as Acute Hepatitis. These fictive to their imagination this inflammation in three fourths of all the obscure affections presented to their notice;- a phlegmasia which is of infinitely rarer occurrence in this and other temperate climates, than any disease, I may almost say, in the Nosologicae Table. Marks of true inflammation of the Liver are not in reality presented to the dissector in more than one case in a hundred of the supposed instances of it. The causes to which they attribute Hepatitis are precisely those which produce inflammation of the mucous membran of the alimentary tube. Predominance of inflammation in the region of the Pylorus and in the Duodenum, suffice to develop the train of symptoms which they conceive to be characteristic of Hepatitis. It is generally

by pain in the right Hypochondrium, by the tumefaction and resistance of that region, by the yellow colour of the skin, by the deep colour and lateritious sediment of the urine, by bitterness of taste, mucoso-bilious aspect of the tongue, which is in general red at the point & edges, thirst, disgust for food, by the vomiting of bile, & pain communicates to the right shoulder, accompanied by fever, that Physicians judge of acute Hepatites.× These considerations are pregnant with results of the highest practical importance; they should deter Physicians from the administration of irritating medicaments when such phenomena present themselves. They announce to him acute gastro-duodenitis, which such agents tend to aggravate or perpetuate in a Chronic form, and then induce, as a consecutive effect, structural alterations in the Liver. These affections of the Liver, whether acute or Chronic, excepting those supervening to wounds, are always preceded necessarily by an inflammatory condition of the <u>duodenal</u> lining membrane.

Another and last variety which we shall consider of gastro-duodenitis, is that upon which is engrafted the class of morbid phenomena constituting Yellow fever. I deem it needless for me to recapitulate the arguments formerly adduced in support of the similarity of character of this fever with common Bilious fever, and of their mutual dependency upon an affection of the mucous membrane of the Stomach & Duodenum. Suffice it to remark in general terms, the two diseases are observed to occur concomitantly in different individuals; the precursory

× Bronssais's Chronic Phlegmasiæ

signs are in all important respects analogous – the order of the occurrence of the secondary phenomena is similar, the only essential difference consisting in the grade of violence with which they become implicated – and the post mortem appearances do but differ in the intensity of the gastro-duodenal lesion. The gastro-duodenitis occurs in the form denominated Yellow fever under characters of peculiar malignancy, and the sympathetic disturbances must of necessity be aggravated in a corresponding degree. Having thus already described many of the most important features of this malady under the head of Bilious fever, we will but superficially pass in review the symptoms of the primary seat of disorder together with the Organic & Reflex sympathies that become superadded.

The symptoms before referred to as indicative of Gastro-duodenal irritation are most generally developed prior to the supervention of fever. These gradually augment in severity. Ingesta are no sooner admitted into the cavity of the stomach than they are rejected – White and acid mucosities are then thrown up either alone or intermingled with the ingesta. Pure bile of a yellow colour sometimes appears, and at a later period, "a black substance, mixed with abundant mucosities, resembling soot mixed with the white of ~~egg~~ egg, beaten up with water". The appearance of this black matter, called black vomit, though a very common character in Yellow fever, yet is by no means confined to it nor essential to its nature. Various opinions have at different periods been entertained in regard to the source of the black vomit. Some consider it as originating

in the Liver, others as derived from the Spleen, but numerous facts concur to prove incontestibly that it is one of the terminations of intense inflammation seated in the mucous membrane of the Stomach. The observations of Dr Physick contained in the 5th Vol of the New York Medical Recorder, are conclusive in testimony of the correctness of this view. No substance presenting the characters of black vomit has ever been discovered in either of the above organs, in the Biliary ducts or in the Gall-bladder. Chemical and other tests discover no analogy between this substance and bile; and a fluid, possessing properties closely resembling black vomit, is a frequent product of Chronic inflammation of the Stomach terminating in schirous and other degenerations of its tissues. These considerations go far to establish the fact that this fluid is a morbid secretion from the mucous follicles of the stomach, and is the result of active inflammation.

The organs of Organic life, which are instrumental in elaborating materials for the support of the economy, or engaged in eliminating and throwing off matters possessed of deleterious properties, are largely implicated in virtue of the strong sympathetic association by which they are linked to the primitive forces of phlogosis, and to each other. They are greatly disturbed, or altogether interrupted in the performance of their offices. The Liver, the Pancreas, the Spleen, the Kidneys and in a word all the organs and structures whose vital acts are controlled by the ganglionic nerves, become deeply involved in the chain of morbid sympathies. The jaundiced appearance of the surface testifies the profound lesion under which the Biliary duct is labouring. Very

conflicting sentiments have been promulgated by different writers in reference to the proximate cause of the Icteria has assumed frequently in the course of this disease. These discussions unfortunately have mostly related to matters of secondary importance as regards practical utility. The quo. modo has more particularly engaged attention, to the total disregard almost of the Cur. Whether this condition is attributable to a resorption of the Bile in its totality, or a single constituent of it, as the colouring matter, or whether we are to ascribe it, in accordance with Joseph Frank, to a sort of Sanguineous extravasation, similar to what occurs in Ecchymosis, it will be at once perceived are considerations of inferior moment. That which is more worthy of attention, and in the elucidation of which the researches of modern Pathologists have proved eminently useful, is the condition, or the cause of that condition of the textures, which impedes the discharge of the biliary fluid through its natural outlet. Modern Inquirers have established, by a mass of evidence that is altogether irresistible, and which must ere long secure the affirmation of all unbiassed minds, that Jaundice is very frequently symptomatic of Duodenitis — nay most frequently symptomatic of this condition than of any other. M. Rochoux affirms, that in his dissections of many victims to Yellow fever at Martinique, the lining membrane of the Gall-bladder & ducts were always found inflamed and thickened — this condition being accompanied with marks of inflammation in the Duodenum. Dr Marsh has also described several cases in the Dublin Reports, showing that Jaundice not uncommonly

arises from an inflammatory state of the mucous membrane of the Duodenum, from which the inflammation is extended to the lining membrane of the ducts, whereby a contraction of these passages is produced, either by a spasmodic constriction or by a thickening of their Coats. The pathological researches of Broussais Andral and others have also conducted them to the conclusion, that inflammation primarily seated in the Duodenum, and secondarily involving the continuous mucous surface of the Biliary ducts, is the immediate cause of the yellow tint presented by the surface in the majority of the instances of its occurrence, and that to this condition of these structures we are to attribute this phenomenon in Bilious and Yellow fevers. The exit of the Biliary secretion along its natural channel being thus obstructed, it is absorbed by the Lymphatic vessels which traverse in infinite number the substance of the Liver, and which minute injections demonstrate to be uninterruptedly continuous with the extreme ramifications of the hepatic ducts - it is conducted thence into the mass of the circulation, is conveyed along with its current into the intimate recesses of the Organism, is then deposited and imparts to the body the citron colour observed.

The Organs of Relation also sustain a capital lesion under the influence of this violent grade of Gastro-duodenitis. Cephalalgia with its attendant phenomena first discloses that the irritation is transmitted to the Encephalon. Then succeeds the symptoms characterizing the ataxic state, and subsequently appear Adynamia

with all the horrible consequences of this state. The skin presents then a livid colour, the tongue is covered with a feuliginous coat extending over the gums, teeth and lips; the breath is fetid; the dejections often involuntary and exhaling like all the excreted fluids, an infectious odour; the abdomen becomes tympanites; the cohesion of the solids is greatly diminished and the fluids possessed of such tenuity that an exhalation of bloody serum occurs from the mucous lining of the outlets of the different cavities; extravasations also take place beneath the cuticle, developing the appearances called vibices, impetigo &c; the pulse is contracted small, frequent, and irregular; the muscular forces are prostrated and the patient passes from this state into the arms of death.

Having already greatly transcended the limits usually allowed a Thesis, I find myself obliged to omit the therapeutical means, which should be adopted, in consonance with the views I have delivered, in the several varieties of Gastro-duodenitis.

An Essay
On
Cholera Infantum
Submitted to the Dean,
Provost
And Medical Faculty
Of
The University of
Maryland
For the degree
Of
Doctor of Medicine
By
Wm Ellis Pierson
Of
Gettysburg
Pa.

March 5th 1834.

# Cholera Infantum.

This disease, the treatment of which (successfully) has so often baffled the skill of the most able and experienced medical men I now attempt to describe - not however with the hope of pointing out any thing new or interesting, either in the Pathology, Etiology, or treatment of it, but solely for the purpose of giving a brief relation of facts such as have displayed themselves to me during my brief term of Hospital practice; together with the small share of information which my limited reading and acquaintance with the best Authors upon the subject has enabled me to gain.

This very distressing and frequently fatal disease generally occurs in America during the Summer and Autumnal Months, both in the Cities and Country, but much more frequently in the former than in the latter. Those children between the fifth and twentieth month are most subject to it, and more cases are said to take

place in the month of June than in any other.
This disease in the opinion of our learned Professor
of the practice is indigenous to the United States
and is the growth of but little more than half
a century. It has also been sometimes observed
to have confined its ravages to particular dis-
-tricts, while the neighboring ones of the same coun-
-try and Climate have been wholly exempt from
its etiology. This disease has been attributed to
many various causes. By some it is said
to depend on a particular state of the Atmos-
-phere. By some to the great irritation produced
by distention; again impoverished diet and
an insufficiency of clothing have been assign-
-ed as the strongest predisposing causes of
this disease and again visceral congestions
and particularly gastric derangements.
The latter is the opinion of most medical men,
and from experience it appears to be the most
plausible.

When we are called to a patient labouring under this affection we are most usually apprized of his having laboured for some time under disorder of the digestive functions, either with a total loss of appetite, or with an inordinate one; and both these symptoms may be attended with more or less irritation of the bowels. In most cases the patient has shown symptoms of Diarrhea a few days or even weeks before the attack of Cholera is established.

Symptoms. The first physiological derangement which manifests itself in Cholera Infantum is visceral congestion. A profuse bilious discharge from the Intestines is the first prominent symptom, and while it continues bilious, there will be few if any other very manifest signs of indisposition. The tongue however will be found to be white or yellow - the thirst will be increased and the appetite impaired. The fever is either remittent or intermittent, and

in the early stage of an active character.
In the second stage the fever changes its grade becoming typhoid with a small, quick, slightly corded irritable pulse. A violent vomiting takes place sometimes mixed with bile. The vomiting in some few cases is entirely absent, in other cases it not preceded by purging.
Nothing is generally vomited at first but the milk - afterwards mucus or slime - then undigested aliments. The evacuations per anum from having been first dark and bilious, now change and assume the appearance of dirty water in which meat has been washed.
The urine is scanty and highly coloured, and is scalding to the delicate surface of the skin, where great care has not been taken to prevent it.
This wasting disease soon reduces the infant to a mere shadow - the skin of his body becomes loose and shrivelled; the ends of the fingers and nails put on a bluish cast, and the

countenance resemblee that described by most authors as peculiar to Dysentery.
We have in fact few diseases in which emaciation occurs so speedily and unexpectedly as in Cholera Infantum. We may not unfrequently observe a streaked or tightened appearance of the integuments about the eyes and forehead together with a manifest depression of the Cheeks. These indications to the inexperienced eye would very often create the belief of sudden and immediate death; but I have known this distressing event under these apparently unpropitious circumstances to be prolonged several days or weeks, and in some few instances a complete recovery to take place.
Another Symptom accompanying this malady and doubtless that which excites most the tender Sympathy of the bystander is a low muffled discontented moan with very few intervals of cessation. The patient cannot obtain un-

interrupted rest, but is constantly disturbed by startings, and twitching of the muscles, as one unexpectedly roused in the midst of a dream. The vomiting is not so urgent a symptom as in the Cholera of Adults- the patient after the first day seldom vomiting except he has just eaten or drank too much, and then it is not attended with much retching or straining. The stools in many cases have amounted to fifteen or twenty in twenty four hours, but then sensibly diminish, as the disease assumes a chronic character. The skin is dry, in some instances however there is a slight degree of moisture of a cold clammy character. This state of the skin in a pathological point of view is all important, and is most justly entitled to a large share of our attention, inasmuch as its removal will have great weight in the restoration of the healthy function of the

liver, stomach, and whole alimentary canal. The extremities are generally below their usual temperature, while the head, breast and abdomen are warmer than ordinary. The determination of blood to the head takes place while the quantity afforded to the parts more distant from the heart is sensibly diminished. The child in this state is more manageable than in the delirium which may subsequently ensue. It is also more torpid and listless. The chymefactive process is almost entirely suspended, for the most bland and easily digestible substances afford the little sufferer but scanty nourishment, and tend to increase the diarrhea. Even water itself will often excite alvine evacuations. The gums are swollen, black, livid or red - the lips ragged and have often a rim of black sordes about their edges.

However various may be the symptoms under which this affection shows itself, hepatic and gastric derangements will rarely be found wanting. In short symptoms of this disease are so peculiar, and so well defined in the genuine forms, that it will always be recognised at first sight by the medical man. When this disease is drawing hastily towards a fatal termination symptoms of Hydrocephalus, or accumulation of water in the head manifest themselves- too often the unerring precursors of death.

I would not however say that in every case of this affection where there was much sensorial embarassment that there necessarily occurred Hydrocephalus, for each may occur unaccompanied by the other.

In this the last stage, the egesta are tinged with blood light coloured and watery, or rather with a fluid composed of

its red globules and serum; for the crassa-
-mentum appears wanting- there being no
disposition to coagulate. The Prognosis of
this affection will next engage us. It is
indeed oftentimes difficult. Our judge-
-ment should be formed mainly from the
nature of the evacuations, and the power
or influence of medical agents in arres-
-ting their rapid and dangerous progress,
from the torpor, listlessness, and general
wakefulness of the child- from the absence
of a regular uniform temperature of the
skin, and from the alternate languor and
wildness of the countenance.
Strabismus has been mentioned by some
writers upon this disease as an unfavour-
-able prognostic. Those indications of a
favourable character are a change in
the consistence, colour and nature of the
fæcal evacuations- a return of pleasant

warmth and moisture to the surface of the body accompanied by a gradual diminution of the blue tinge so generally dispersed over the integuments of the upper and inferior extremities- a calm and less hurried force of circulation; with a total absence of all tendency to cerebral embarassment. The countenance before so wan and haggard now is lighted up with a general glow of cheerfulness, and the whole contour of face is sensibly changed.

We will now pass to the consideration of those methods, which are to be employed in the treatment of this disease, and which in the experience of the most enlightened medical practitioners of the age have proved most successful.

Our objects are in the first place to arrest the vomiting and looseness of the bowels- to procure a more fresh distribution of

the circulating fluids and to raise them to their natural and healthy standard - and finally to restore the tone of the system at large. In the commencement, if the symptoms are inflammatory with the pulse full and frequent we may premise V.S. but great attention should be paid to the appearance of the blood when drawn, both as to its colour and consistence. Bloodletting is not however invariably necessary, and the readiness with which the fever degenerates into the typhus type should render us particularly circumspect in the employment of it - for our patient will have full need of all his strength and vital energy to sustain him through the attack. If the Physician entertains a correct pathology of the disease he will be led properly to direct his remedies to existing circumstances, and fairly

appreciate every aspect of the disease.
The best agents to promote our first object;
merely to arrest vomiting will be those
of an antacid, or those of a slightly seda-
-tive character; such as have a peculiar
tendency to allay gastric irritability. The
antacid property of magnesia or soda
may sometimes indicate their employment.
The alkaline and cretaceous preparations
-tions are also highly beneficial for pro-
-moting this indication. If these are in-
-adequate the oppression and irritability
of the stomach is then to be relieved
promptly by emetic substances, which by
their action promote a tendency of the
fluids to the surface. followed by a
mercurial Cathartic. Calomel is best
for this purpose, since it has unquestion-
-ably a specific action upon the liver.
by exciting in it a grade of action compati-

-ble with its mode of vitality. When proper-
-ly administered it is succeeded by an in-
-crease of bilious secretion, and this se-
-cretion will generally be of a better qual-
-ity- and as the bile is the natural stimu-
-lus of the Intestines it improves the diges-
-tion, while its flow releives the congested
vefsels. Hence the improvement consequent
to bilious stools in this disease- As in the
stomach, by a dimunition of irritability-
in the bowels by a more regular action-
and in the skin by a more vigorous deter-
-mination to, and circulation through it.
The dose need not be large. The effects of
this preparation of mercury in this affec-
-tion do not depend on the quantity in-
-troduced; but on certain conditions of the
system. by which the latter is rendered
more or lefs susceptible of its action.
I would not depend solely on the Emetic

and the Cathartic in the treatment of this malady - Although in themselves agents of the most vital importance, and those upon which we should repose our main confidence - still there are other agents which will greatly assist them and powerfully cooperate in producing the desired effect. When there exists much heat of the abdomen with great determination to the head, sponging with cold water will be found of benefit; but the cold bath except in the very onset when we can promise ourselves sufficient reaction is not indicated. To allay the painful griping, mucilaginous anodyne injections frequently repeated will often afford releif. Blisters from long experience have been found exceedingly beneficial in almost all the stages of the affection, and we may use them upon

the Abdomen and extremities. They should not be kept open but frequently removed. Epispastics may however be somewhat detrimental if the vascular excitement be very great. Great caution and circumspection should be exercised in applying them, for the tenderness of the skin is such that cases have occurred, where mortification has taken place from the excess of inflammation created by their application.

Anodynes have been recommended by several Authors in this disease. There may perhaps in some instances be indications requiring their use, but in general the mercurial Cathartic with the Emetic will be able to accomplish the cure.

Tonics have also had their advocates and many have extended their panegyricks in praise of them almost as specifics in the remedial management of this disease.

They will be found in my opinion to be superfluous when free purgation has been properly produced. In extreme cases where there is a tendency to sinking, and our object is to excite a rapid determination to, and powerful influence upon the surface we may employ frictions with Cayenne Pepper. Brandy. Tinct. Cantharides, Spts Terebinthinæ or any of the more powerful stimulants.

Having thus enlarged somewhat upon the best mode of treating this disease, and consequently to the most favourable termination of it; we will leave it to pass for a few moments to the consideration of the Prophylaxis- or best preventative means which it would be necessary to have recourse to, since we are told that "preventive is better than cure:

Should a strong predisposition to Cholera be

suspected the best plan will be to send the patient into the country during the summer. Both as a preventative and a remedy, country air is decidedly the most effectual to which we can resort.
If this be not practicable; it becomes necessary to substitute means or measures which may produce as near as possible the same results. To keep the patient cool and expose him to the fresh air are the objects to be attained. The brightened eye and animated countenance of the infant when under the influence of a healthy atmosphere give us manifest proof of its favourable influence; even when labouring under the disease in its lowest stage the little sufferer will exhibit immediate indications of amendment.
Mothers have been in general too unguar-

-ded with respect to weaning their offspring.
This should not be done within the first
year- as it not only makes them more
susceptible to predisposing causes having
a tendency to produce Cholera Infantum,
but also to other affections of an equally
aggravated character.
Since dentition is known to predispose
the system to attacks, and after they have
occurred to increase their violence it
is highly necessary to attend to the state of the gums
and to remove or counteract this source
of irritation. If at all swelled or
painful they should be lanced freely,
and the operation repeated as often
as their inflammatory condition may
demands-
Dissections of patients who have died of this
disease exhibit more or less inflammation
of the alimentary canal. especially of the

mucous membrane - which frequently involves the Mesenteric glands - They are found to be much enlarged and indurated. The liver is somewhat enlarged and is of a dark hue - the gall bladder is sometimes distended with dark green bile. On looking a little farther both the Pancreas and Spleen show evidences of engorgement. Water is also found in the ventricles of the brain.

An
Inaugural Dissertation
on
Puerperal Fever
Submitted to the Examination
of the
Trustees and Medical Faculty
in the
University of Maryland
For the degree of
Doctor of Medicine
by
Samuel E. Boggs
March 16th 1834

To

Maxwell McDowell M.D.

late Professor of the Institutes of Medicine

in the

University of Maryland

And To

John B. McDowell M.D.

this Essay

is respectfully inscribed

as

a mark of respect.

for

their private worth and professional character

by their Obliged Friend

and pupil

the Author

# Introductory Remarks.

The writing an inaugural Thesis is a matter of no small impat to the candidate for his degree — It is a matter of importance for the following reasons — The one because he is extremely desirous of writing that, which shall be worthy of the Professors, who have been zealously labouring to increase his stock of medical Lore, another, that his first efforts may not be unworthy of his proud Alma Mater, and thirdly he feels that he is incapable of doing justice to the subject which he has selected. Under these circumstances some allowance will be made for the imperfect manner with which he handles it —

The anchor is being weighed, his vessel will soon float into the vast sea, and he fondly trusts, her pilot, ever mindful that he is an alumnus of so

highly exalted an Alma mater, will guide the vessel safely into harbour, doing credit and honour to himself, but giving greater to the master Pilots who taught him —

## Puerperal Fever

In writing on this disease, the kindest feelings of our nature are enlisted, for woman suffers and woman dies, alas! too often dies, for how often do we see this fell monster consigning to the tomb, its victim lovely in death — Ah! with what an agony of spirit do you hear her tender offspring in the most heart-rending manner ask for that sustenance which nature intended for it, but alas! in vain — a husband, the

world is a blank to him — every prospect blasted — Who could witness such a scene, and not feel? What Physician could see such a sight, and not feel, awfully feel, the impotency of his art. Yet would there not be asserted an insatiable desire to master so distressing a monster, and to crush him at the very threshold; certainly, and from such cause I have no doubt some one of us may be stimulated to such mental exertion as shall not only be of essential importance to the world, but do credit to ourselves, and bring honour and renown to our far famed, and highly respected University.

The pathognomonic symptoms which generally characterise Puerperal Fever, are frequency of pulse, increased temperature of the body, short anxious breathing, soreness, pain and tension of the abdomen, the abdomen often appearing as large as before parturition, tensive pain over the forehead, peculiar

wildness of the eyes, prostration of the vital powers, suppression or diminution of the milk and lochia, a flaccid state of the mammae, and an unnatural condition of the excrements, accompanied by Diarrhoea, sometimes, though not always; yet when the disease proves fatal, diarrhea is a prominent and distressing symptom.

This is a disease peculiar to women after delivery, frequently prevailing in hospitals and is supposed to occasion the death of nearly one half of those who die in child-bed.

Its epidemial influence at times, is a sufficient characteristic of its, nature, because this circumstance never takes place with respect to simple inflammation of the uterus and peritoneum — Various opinions are entertained both with regard to its nature and the causes producing it, Some have doubted if it deserves the title of specific, or ought

to be considered as of a particular genus: others again, have considered the disease as uterine and peritoneal inflammation, accompanied in its progress by fever of a low malignant nature, or typhoid type. The diagnosis between puerperal fever and the more common forms of peritoneal and uterine inflammation which occur in the puerperal state, is still obscure and undetermined:

A stoppage of the lochia has been assigned as one of the causes of puerperal fever: but the circumstance of their being sometimes absent & sometimes present at the attack, and during the progress of the disease, shews their perfect independence of each other; and oftentimes the return of the discharge is one of the first symptoms of convalescence — It has been thought by others, that puerperal fever is produced by the absorption of a putrid sanies arising from dead parts of the omentum or mesentery, or some other putrid

material in the abdomen or uterus –

A few Physicians have represented it as owing its existence to an undue secretion of milk: the true cause of this disease, I imagine has not yet been discovered: at least, so far, I have not been able to draw any correct inferences respecting it –

With respect to the infectious nature of this fever, a great contrariety of sentiment has indeed existed: the probability is in favour of its being so, but it is nearly impossible to form a decided opinion on the subject. Doubtless it will be the safest practice to consider it as infectious, and to cut off all intercourse with pregnant and parturient women with those who labour under it – We are told by respectable Authority that this disease does not often run down into a low type in this country –

Other medical writers are of the opinion that it has a strong tendency

to the typhoid type in an advanced stage, although at its commencement, or during the first twenty four or thirty six hours, it is usually attended with inflammatory symptoms, and even with topical inflammation in the abdominal viscera, but more particularly the peritoneum, or membrane which envelopes them— The Pathology of this disease is obscure, and that this is evident, may be inferred from the variety of opinions on this subject. My own opinion inclines to the belief that the abdominal viscera are all more or less concerned, for these reasons, We find general pain on pressure over the whole region, Is there a relaxation of the Uterus? I believe not, but there must be disease in that organ,

May not the peritoneal be sympathetic with the uterine affection—

A friend of mine informed me that one case had come under his notice, where there was a swelling of the abdomen from this cause the swelling was rapid, but soon

gave way to aperients with anodynes, yet vomits return upon any irritation in the uterus; in this case although the Lady was unmarried, yet there was frequently sympathetic affections of both liver and lungs, alternately. If the sympathy be so great and powerful in its effects upon these distant organs, how much greater would it be upon the peritoneum immediately after the great change produced by parturition. It is said that this disease assumes different types, sometimes, Synocha Synochus, and Synochoid, and again of a putrid character, We are told that Sporadic cases are generally inflammatory; when epidemic much less so, and in Hospital practice almost invariably of a low type.

If these views be correct, the practice must necessarily vary, under these different types. Debility here has slain its thousands, and ten thousands. I mean apparent debility. When called to a patient labouring under this disease in its inflammatory

form, I think I should not be too much influenced, even by the high authority of Denman, as to hours, but if the pulse required it and would bear it, I would bleed and bleed until the pulse felt it: generally at the early stages of the disease, this is a very important remedy. It appears to me that such a thing as laying down any very particular rules, by which to be guided in this, as well as in many other diseases; is exceedingly difficult, and next thing, (I was going to say) to impossible.

The following has been found serviceable, under circumstances similar to the foregoing: A large dose of calomel, prescribed on the same principle, that it is used in Croup, and purged off with Castor Oil, and Spirits of Turpentine: the latter as a purgative, it has been thought, debilitates less than any other, and seems to possess a controlling power over inflammatory action, therefore, has been a good deal relied on, as a purgative, the bowels having been freely evacuated at the onset; resting satisfied

with four or five evacuations a day: so ordering the medicine as to preserve a regular and systematic action upon the intestinal canal — when the inflammatory action is considerably reduced, the plan recommended by Professor Potter has been found of signal efficacy. Viz. a very large blister covering the abdominal region; previously using emollient applications. Where the lochial discharge has ceased & considerable pain has attended the patient: flannel wrung out of hot water, and frequently applied, has been attended with the greatest relief, & these formidable and threatening symptoms have vanished.

It has been thought that diaphoretics have been serviceable at times; yet a complete relaxation of the skin, and a flowing perspiration have been found in the course of this disease not to be attended with a remission of its violence. Yet, as I am informed, in a case of this kind, with a pulse like a thread, the disease yields

to the treatment advised above, with no other deviation, than an occasional anodyne to allay a most distressing and troublesome cough.

One of the first symptoms of convalescence was a return of the lochial discharge, and short, but refreshing sleep; that ever prevailing symptom of indifference to the offspring was manifest, yet when the disease began to give way, the mother shewed itself in all its beauty, here the lancet could not be used, the time had passed, the effects of the blister was evident, and the calomel with the oil and turpentine evidently preserved the impression already made by the blister, and the regular operation on the bowels, removed all causes of irritation from the bowels, and prevented the accumulation of any: by regulating the bowels as directed, we are likely to gain much, because we do not increase the peristaltic action at one time, and then suffer it to sink as much below, as we had raised it above par, at any other time, and by this uniform

and systematic action we keep our eye upon the operations of nature, & by thus preserving regularity in one part of this nice machine, the other with necessary adjuvants, will soon be brought into its original beautiful symmetry.

An
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on
Syphilis
Submitted to the examination
of
The Provost, The Trustees & Medical Faculty
University of Maryland
for the degree of
Doctor of Medicine
by
William Raymond Sanderson Jr.
of
Frederick City
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To

Joseph Reese Frey A.B.

of

Cincinnatti

Ohio

and

John Charles Carpenter

of

Philadelphia.

There is no one, to whom, I could more appropriately dedicate this Thesis than the above named gentlemen, educated as we have been in the same College, and under the same Professors, sharing in each the toils, trials & amusements.

I hope they will consider a mark of that friendship which, originating almost in our infancy, has grown with our growth & strengthened with our strength.

With my most heartfelt wishes for their general welfare & happiness & that they be successful in the prosecution of their several avocations - I subscribe myself

Their truly sincere friend

The Author.

To

William Waters M.D.

of

Frederick Maryland.

This dissertation is inscribed in grateful remembrance of the many professional favours conferred on on me while a student.

Likewise

To

Nathaniel Potter M.D.

Professor of Pathology & the Practice of Medicine

in

University of Maryland.

This essay is very respectfully dedicated in testimony of my respect for his eminent abilities and the great benefits bestowed upon the Public by his eloquent Lectures and valuable Medical Writings.

The Author.

# Syphilis.

Much has been, and much more may be very profitably written on the disease I have selected as the subject of my Thesis.

It is with a great diffidence I approach it & with an entire consciousness of my own inability to treat it to the satisfaction of the enlightened Faculty of the University of Maryland.

Assuming your my experience is extremely limited, having only seen the Practice of the eminent Professor of Surgery in the Infirmary, I am induced to believe you will not examine with a critic eye the few & authority & unconnected remarks my reading & meditations persuade me to submit to your consideration.

Notwithstanding Syphilis or Lues Venerea was first accurately described described about the end of the fifteenth century, which caused many good pathologists to conclude it was introduced into Europe by Columbus & his followers, there are many facts going to prove its existence many ages anterior to that time, I shall enumerate a few. A disease closely resembling it is described by Celsus in his "De Obscenarum partium vitiis;" Gibbon and many others say it is the affection spoken of in Leviticus Chapter XV. Dr Thompson who has investigated the subject with much learning & discrimination, thinks it not more than probable it has prevailed

under different grades of severity in all ages & countries, and that it has been generated de novo thousands of times by impure sexual intercourse: — also is not likely Job had it when sorely afflicted with "loathsome diseases".

Lastly, Bell says many arguments might be adduced to prove its prevalence in amongst the obscient Jews, Greeks & Romans, the fact of where it being of little importance in a practical point of view, I am content to leave its decision to those who are more competent and more fond of the productions of authors of "by gone days."

Syphilis can only be communicated in the act of coition, or by the matter being applied to an abraded surface; it is also communicated to the child in the act of being born by coming in contact with venereal ulcers — children have been born with the disease, the Gentlemen with whom I have prosecuted my preparatory studies of several cases of this nature that have fallen under their own observation.

The child has caught the disease from its nurse and vice versa — persons have been infected by being bled with lancet used to open Buboes.

Surgeons mention many other methods by which this disease has been transfered by the above will suffice to my readers an idea of the most common modes.

Lues is most ordinarily propagated by coition — a few days sometimes weeks, after the copulation there appears on the glans penis preputium &c in men & labia pudendi, clitoris &c in women, a small inflamed pimple, this pimple is called chancre, by the endeavors of the system to rid itself of the chancre matter serum or pus is poured out = The Chancre eventually ulcerates, discharging ill conditioned pus, the ulcer is now foul, sloughy sore with hard prominent edges, the pus is of a dirty green colour, thin, consistent; the Chancre spreads rapidly the greater of the penis &c.

Chancres on other parts than the genital organs are larger, the skin is at first red a day or two, when it ulcerates presenting a large ragged ulcer with a deep red bottom, the matter is more viscid than in Chancres of the penis, it accumulates around the edges forming a hard crust, which by the increase of the pus is removed.

Until the glandular system becomes affected the disease may be considered local, but in a few days the absorption of the pus produces a swelling of the neighboring glands, named Bubo.

A Bubo is of a bright scarlet colour, very painful, in time from a small round tumour it increases in size accompanied by slight fever & suppurates, after the discharge of the pus the bottom of the ulcer is hard to the touch, the edges uneven, hard and raised: very extensive ulcers occasionally succeed, likewise fistulous sores.

Primarily the superficial glands alone are concerned, or at least the deep-seated and remote do not suppurate:

The skin is sometimes the first part attacked, but those Surgeons who have written most learnedly on the subject say the first evidence of its becoming constitutional is ulcerated Tonsils.

Chancre & Bubo being the only local symptoms, I come next to describe the constitutional — they are ulcerated sore throat, Tonsils, nose, mouth, tongue, skin, the parts most frequently implicated after these are the bones, fascia, periosteum, fascia, tendons, ligaments, the eyes &c.

When the desease makes rapid progress the Tonsils have been known to be concerned in ten days after the appearance of Bubo, it is extremely difficult to designate the day for the supravention of secondary symptoms as they have been known to appear after all external signs have vanished.

Sore throat and Tonsils are announced by difficulty in deglutition, upon an examination one side of the Throat is most commonly discovered inflamed, in a short time the peculiar copper color of venereal ulcers shows itself, if it is not attended to in its early stages, the contiguous parts the bones of the nose & head for example become involved, cases are recorded where even the cervical vertebræ have been destroyed, the pus is very foul, thick,

and not easily removed from the ulcer.

Under the head of venereal ulcers of the throat may be included those of the mouth, nose, tongue &c as they in most instances arise from neglect or bad treatment.

Thickening of the tongue according to Hunter is a rare symptom, it has been known to proceed to ulceration, the tongue is extremely painful, obliging the patient to keep as if the mouth were too small for its appropriate organ.

Ulceration of the nasal bones quickly destroys them converting the cavities of the nose & mouth into one, the whole contours of the face is then altered, pus is continually oozing from the nares & down the pharynx sometimes almost to suffocation, the breath of the patient is horribly disgusting as to render his very existence obnoxious to himself & his presence intolerable to his friends.

When the nose is attacked the patient complains of a stoppage in one of the nostrils, in quick succession the cartilago spongiosa & septum nasi participate, soon the corresponding weeping eye and hardness of hearing evidence the extension of the disease to the Lacrymal sac & Eustachian tube.

Venereal eruptions or blotches commence with a change of florescence of the skin preceded by a slight fever, pain in the limbs &c the part becoming inflamed is enlarged, the skin is depressed, matter forms, the skin desquamates & new skin

form of squamæ, gradually the ulcer bursts & discharges matter which adheres to the edges forming a scab of a dark brown & copper colour; soon the scab falls off displaying a deep jagged ulcer filled with a consistent, tough, foetid, greenish pus which remains until removed.

The parts most liable to venereal blotches are the cranium, neck, breast, forearm, clavicle & inner edge of the fingers, the palms of the hands & soles of the feet.

All the bones are alike obnoxious to secondary symptoms, those only thinly covered with integuments are frequently the seat of the disease, as the occiput, sternum, ulna, clavicle, tibia &c.

Venereal tumours of the bones are termed nodes; they are circumscribed tubercles never attaining to a great size unless of they are of long standing; the soft parts covering them inflame, deep-seated acute pain extending to the muscles are the principal symptoms, the pain is most troublesome after the limb has been heated by exercise or at night after the patient becomes warm in bed.

Nodes situated on the cranium occasionally penetrate through both tables from which circumstance it often times resembles a sieve.

The suppuration of nodes are well calculated to deceive the Surgeon, they been mistaken for Rheumatism,

the diagnosis is not very difficult although it may at first sight appear obscure, but a little reflection will dissipate all doubt; in Rheumatism the whole limb is swollen in nodes it is confined a small space, in Rheumatism the joints are enlarged, nodes always occupy the shaft of the bone, matter never forms in the former, nor does the bone become carious, lastly the space occupied by nodes is circumscribed & can be traced externally, the swelling in Rheumatism is uniform over the whole limb.

The ligaments, tendons & cartilages are so rare by the seat of the disease, that I do not consider it worth while to dwell on them: Bells says "the affections of the ligaments, fascia, tendons are so infrequent & inconsistent with his experience that he was induced to correspond with others who, from their experience in this branch I had reason to believe would be best qualified to give an account; he continues their responses received from both who has prevented from entertaining a doubt, but none had been able to say his own observation confirmed the fact.

The secondary symptoms are usually accompanied by more or less constitutional derangement, the fever is either intermittent or continued but usually hectic.

Secondary symptoms differ from the primary in the pus discharged not giving rise to a specific contagious disease like that created by the pus of Chancre or Bubo. Vide Hunter.

Some Surgeons in addition to sore throat, venereal blotches &c speak of other secondary symptoms as venereal warts, Iritis, Alopecia & but I consider unnecessary to say anything about them.

Having now given a history of the local & general symptoms sufficiently ample to enable my reader to distinguish the disease, I shall in the next place proceed with the treatment.

I believe I do not violate the truth when I say the Mercurial mode of treating Venereal is the one most generally pursued both in this country and Europe.

There is much contrariety of opinion among Physicians concerning the Modus Operandi of this Sampson of the Materia Medica in Lues. — Bell says it acts as an antidote, idest, when it comes in contact with the virus it renders it inert, Dr Wm Cullen is of the same opinion, & if I am not very much mistaken in Professor of this Institution sustains the same doctrine.

Dr Cullen adduces the follow experiment in proff of his opinion — A Physician took a quantity of matter from a Chancre & mixed it with an equal quantity of Plenk's gummy solution of Mercury, & applied this mixture to a sound person but it not produce any Syphilitic symptoms.

Others say Mercury creates a new disease in the system and cures Syphilis upon the principle that two diseases cannot well exist in the same body at the same time as its therapeutical effects can be explained by both of these theories I will not attempt to decide which is the correct one or whether are not both true.

To prevent the virus from contaminating the whole system Chancre should be speedily healed, if the patient be robust & healthy venesection & purgation should be premised; local applications to Chancre in its first stages is often to sufficient to cure it, of these Lunar is to be preferred, by it Chancre may be converted into a common simple ulcer, but if it progresses notwithstanding, internal general remedies must be resorted to, of these the Protochloride or Protoxide of Mercury are the best, either should be given in one or two grain doses morning & evening the patient confining himself to a mild uniritating diet and abstain from the use of all stimulating drinks, in conjunction with these means mercurial inunctions may be used, the inside of the thighs should be rubbed twice or thrice daily with the common blue ointment, a dram at a time is enough, if the Calomel purges the addition of a little will obviate it, indeed some distinguished Surgeons always

use a prescription of this kind: — it is also well to dress the chancre with lint covered by a mercurial plaister, to keep the chancre clean wash it with a weak solution of Bichloride of Mercury, say a grain to six ounces of water, the black lotion composed of Protochloride of Mercury ℈ij to the ℥i. of lime water is highly recommended.

If there be much arterial excitement active antiphlogistic should be pursued & the patient should be confined to his bed, other symptoms supervening must be treated according to general rules, for instance if the strength fails recourse must be had to bark, wine &c &c.

To have all the beneficial effects of the Mercury it is only necessary to slightly touch the mouth, and as this is accomplished the Chancre will heal kindly, the effect on the gums should be kept some days after the disappearance of the chancre, Ebert says to secure the patient against secondary he has found the above plan the best.

There has been some difference of opinion whether Mercury should be administered whilst the part is occupied by a sloughing or gangrenous state, perhaps it would be well to follow Bell's advice in such an exigency, to discontinue until all the mortified parts are removed, the local treatment of Chancre does not differ from that of any other sore.

It is best not to apply Lunar Caustic to Chancres on the breasts of women on account of its great irritability.

In defiance of all our efforts to the contrary Chancre sometimes pursues the even tenor of its course & terminates in Bubo, to effect its discussion active antiphlogistic are the application of leeches to the part is very beneficial, also cold lotions acetate of lead &c, these being powerless, Mercury must be administered as in Chancre. Dr. Physic speaks very highly of blisters to the Bubo, the internal use of opium soothes irritation.

These not preventing the formation of pus it must be promoted by warm poultices frequently applied to the Bubo until it is fit to be opened, then lay it open by a free of lancet at the most depending point, the subsequent does not differ from that of any other suppurating ulcer.

If the bubo does not heal & its edges are hard, rough & prominent they must be pared away with a knife or eaten down by Lunar Caustic, the knife is preferable, dress the ulcer with lint & Turner's Cerate.

The Muriate of Mercury is much extolled by Pearson, Gibson &c for the constitutional symptoms, the former considers peculiarly efficacious in venereal pains, ulcers of the throat &c and in promoting the desquamation of blotches

Gibson recommends the following solution, one grain of the Mercury to one ounce of water, forty minims to be taken two or three times a day; as a gargle in sore throat Cavenave thinks nothing better.

The other should also be treated by Mercury, it is necessary to keep up the salivation longer in them than Chancre or Bubo.

In nodes if the skin & other superincumbent soft parts are painful nothing will relieve the patient but cutting down to the node, by so doing we render the symptoms milder & free the patient from irritation.

The presence of another disease frequently the cure of Syphilis tedious, in such a case it is well to address our remedies to it & suspend the Syphilitic untill its cure.

Bell recommends the use of Sarsaparilla towards the close of the Mercurial course, especially if we are obliged to persevere in it for a long time, it is well to employ it in all cases, mezereon & guiacum are useful auxiliaries; any of the officinal preparations of the Sarsaparilla which are in all of our Dispensatories will answer. Carpenter's Compound is very much use by the Philadelphia Physicians, dose from three to four tablespoonful daily.

# An Inaugural Dissertation on Gastritis

Respectfully submitted to the examination of the Trustees Provost and Medical Faculty of the University of Maryland

for

The degree of Doctor of Medicine

By

Henry A. Grant

of St Simons Isld

Georgia

March 1854

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March 1834

In defining Gastritis, we will find some difficulty, as it has been differently defined by different writers on the subject. Some define it an inflamation of the peritoneal coat of the stomach. By it, I mean to express an inflamation of the mucous membrane of the stomach; which occasionally extends to the muscular and peritoneal coats. It exists in various degrees of intensity from the most acute to the slightest; & a acute and chronic form.

Symptoms of acute Gastritis. In the commencement there is a burning pain in the region of the stomach, which is always increased by pressure. A constant desire for cold drinks, which are immediately vomited. Nausea, and an inclination to retch are incessant. The heat over the surface of the epigastric region is considerable, while the extremities are cold. The patient frequently comp-

laint of sore throat, and upon examination the fauces will be found inflamed. Hiccup is a troublesome symptom. The tongue cannot allways be depended upon as its appearance is frequently different, however it is in general of a very red colour at the tips, and round the edges; bodied and occasionally very rough in the centre and towards the root. And in long standing cases of chronic inflamation, it is red, glazed and smooth, the last appearance is more commonly a symptom of Enteritis than gastritis. The breathing is anxious and quick. The patient is restless, generally lying on his back, with his head raised by the pillows, and his feet drawn up to keep off the pressure of the abdominal muscles and weight of the bed clothes. The pulse is small and the prostration of strength soon becomes very great. The countenance is cadaverous and expressive of much anxiety; at the same time

the patient complains very much - There is scarcely any acute disease which exhausts the power of life as soon as the present: and hence the symptomatic fever has been termed one of a typhoid type - The symptoms attending this disease are sometimes very mild, and lead us into too fatal security - These mild symptoms have been known to accompany individuals who have swallowed poison, and no signs indicative of danger appeared until within a very few hours of its fatal termination - A case of this kind, which is exactly in point, is reported to have occured to a soldier of the 17th foot, who swallowed two drachms of the muriate of Mercury, and died on the eighth or tenth day contrary to the expectation of all, while on the close stool, having been able to get out of bed and walk to it unassisted - This acute form of the disease rarely occurs, its most frequent form is the sub-

acute and chronic, and we see these most frequently in fevers, dyspepsias and in the last stage of phthisis—

Causes of acute Gastritis— Substances of an irritating or corroding nature, over distension of the stomach by indigestible or stimulating articles of food— a draught of cold water swallowed rapidly, while the body is in a heated and free state of perspiration from fatiguing exercise. Stimulating drinks; cold applications externally; the suppression of sanguineous discharges; metastasis of rheumatism or gout and External mechanical injuries to the epigastrium— Besides the above all of which may give rise to acute gastritis, there are some of a more occult character which appear to possess the power of producing inflamation— Of these miasm which produces yellow fever is the most remarkable— This form of the disease occurs in other forms of malignant fevers partic-

ularly the putrid typhus of warm climates
Prognosis- A gradual subsidence of the pain and disposition to vomit accompanied with a lateritious sediment in the urine. Spontaneous feculent alvine discharges. A gentle moisture of the skin, and a more developed and compressible pulse indicate a favorable termination of the disease- If on the contrary pain with a continued inclination to vomit continue with unabated violence for several days, with hiccup and difficult respiration- a small pulse more frequent and corded the worst consequences are prognosticated- If the symptoms have continued in this progressive course of violence; and the pain all of a sudden ceases, the extremities become cold and clammy with dimness of sight and delirium- a fatal termination is inevitable-
Diagnosis- In gastritis as it is generally developed may be distinguished from cramp and flat-

ulent pain by the following diagnostic marks. In gastritis the pulse is small quick and tense. In spasm or flatulent pains it is generally full & nearly natural. In the former disease violent vomiting is generally present, particularly after taking warm drinks. In the latter vomiting rarely occurs, and warm drinks do not aggravate or excite it. The pains seldom intermit in gastritis, except immediately after taking cold or bland fluids into the stomach, or for a few minutes after vomiting. In spasm the pain often intermits leaving the patient free from pain for several minutes, independent of cold drinks or vomiting. In the former the pain is of a burning or lacerating kind whilst in the latter it is heavy, aching and extremely severe. In gastritis the patient always lies on his back, and moves himself as little as possible. When in spasm he throws himself about in bed, sits up or walks the room

The skin in the former disease is hot and dry In the latter it is cool and moist - In gastritis finally, and the surest diagnostic mark is, the pain is always increased by pressure. In cramp pressure generally affords relief from the violence of the pain -

Pathology - Gastro mucous inflamation may be either general or partial - The inflamation in this form of the disease is very apt to extend to the oesophagus, the surface is deeply injected red, villous and thickened - This disease is sometimes limited to the villous coat, and in these cases they are seldom violent - When the inflamation extends to the mucous surface the vessels are minutely injected, and patches of blood are frequently seen; the mucous coat is also thickened, and generally pulpy and soft, and when we attempt to detach it is easily lacerated - The mucous surface is however subject to much more general inflamation

and the surface presents the appearance of a bright rose colour over its whole extent - Secretes mucous or a muco purulent fluid copiously - This state says Dr Bayne sometimes occurs spontaneously, or may be produced by repletion or improper articles of food, and several of the acrid poisons - This form of the disease is found most apt to occur in persons who have been affected with chronic diseases - in which the gastro mucous membrane assumes a singular appearance - Some part of the membrane being a pale white, a bluish, a gray or rose colour These appearances are in clusters, sometimes thickly spread out, at others thinly, and at others again in long stripes; these parts are not in general ulcerated, but are depressed below the surrounding surface of the membrane - According to M. Louis to whom we are indebted for the correct discription of this change, says when in narrow stripes, it is distributed nearly uni-

ons over the whole surface of the stomach — when continuous it occupies the large extremity of the organ; it is seldom confined to the Cul de Sac, and in some instances appears at once at the cardiac & pyloric orifice. The villi are not distinguishable on the affected parts — It is the opinion of some writers that they are absorbed, and others describe it as digestion of the stomach — In persons of a scrofulous habit, the gastric membrane is more likely to become occupied by roundish eminences with occasional points of ulceration. Sometimes they are round or oblong and from one to several lines in diameter —

Treatment — Bleeding must be resorted too in the early part of the disease, and must be frequently repeated — The smallness of the pulse must not deter the practitioner from the use of the lancet; on the contrary we may consider this as one of the indications which

require venesection - There is generally a remission of the symptoms after each bleeding, but they do not continue any length of time, and we should therefore again have resource to bloodletting, before they become aggravated — we should repeat the bleeding again in two hours, and after we have depleted thus far, we may apply leeches to the epigastrium - Eberly says when we cannot procure leeches, we may substitute a large blister in their place over the epigastrium - Cupping also when leeches cannot be obtained is a very excellent auxilliary in this affection - Cathartics are entirely inadmissable in this disease, for they only increase the irritation and inflamation - Considerable advantage results from the free use of mild mucilaginous drinks, such as flax seed tea, barley water, rice water or what is better a solution of gum arabic in water - The acidulated acids are in general agreeable to the patient, particularly

lemon juice. Broussais says the juice of the orange is preferable. The mineral acids are in general injurious. Costiveness must be prevented by laxative enemata. Opium is a valuable remedy in this disease. Opium says Dr. Armstrong in health constipates the bowels, but in gastritis and enteritis, it promotes the action of purgatives, and when given after proper depletion, may fairly be accounted one of our best remedies. The two most remarkable effects of a full dose of opium are a reduction of the pain and pulse; both of which are especially desirable in gastritis. The patient will fall into a sleep, and the pulse from being small and quick, will become full and soft. Dr. Wains recommends the combinations of opium and calomel in this disease and with advantage. Dr. Eberly says opium should be given in large and frequent doses so as to keep up its action on the system. He says that in two of the most decided cases of gastritis were treated

with opium in two grain doses every three hours and with the happiest effect, until eight grains were taken - During the convalescence the patient should take no solid food; nothing but liquids nourishment should be taken, such as weak gruel, boild milk, barley water, beef tea, or chicken tea, or preparations of arrow root, sago, rice or tapioca -

I have stated above that gastritis might be divided into the acute and chronic, having in the preceding pages described the acute form it now remains for us to consider the chronic which differs from the acute in being much less rapid in its progress - Chronic inflamation of the mucous membrane of the stomach, is one of the most common, if not, most fatal affections - The worst forms of dyspepsia and numberless of other gastric and bilious disorders are in a great majority of cases a consequent of gastric mucous inflamation -

Symptoms - This disease is very gradual in its approach, and well calculated to elude det-

ection and observation. The first symptoms are such as characterize indigestion, as acidity, flatulency, a sense of heaviness or oppression after eating, eructations, and slight transient pains in the stomach. The patient feels most easy on an empty stomach, yet he has a craving appetite. As the disease advances the epigastrium becomes somewhat tumid, tense and sore to the touch. Nausea and vomiting, one or two hours after taking food. The gastric distress becomes more and more troublesome, especially after taking food. And a constant sensation of pain is experienced in the epigastric and right hypochondriac region. The pain in the stomach is confined to one place and is of a stinging or lancinating character. A sensation of pressure against the diaphragm as if a ball was pressing against it is experienced by some patients, whilst others complain of a sensation as if a bar were fixed across the stomach preventing the pas-

ing of food or drink into the stomach (Broussais) In some instances a fluid resembling the white of an egg is thrown from the stomach, and the patient complains of a most painful feeling of pyrosis (Abercrombie) - In the advanced periods of the disease the appetite fails, and in some instances there is an abhorrence of food - Costiveness is at first an attendent of the disease but finally diarrhea occurs in many instances, accompanied with tenesmus, and sometimes with mucous and bloody stools with more or less tenesmus - The patient is more or less morose, dejected, impatient, and of an irritable temper, and but little disposed to enter into a detail of his suffering - The cheeks and labia are of a deep red colour - The tongue is generally clean and smooth, of a red vermilion tint over the whole surface, or red and granulated "like the joints upon a strawberry" - Emaciation goes on rapidly - The skin adheres tightly

to the muscles, and sticks between them in their interstices. The pulse is generally quick and more or less tense, not often accelerated in the first part of the disease unless after eating. In the latter part of the disease the pulse becomes hard and frequent. The disease continues sometimes for many months until the powers of the system are exhausted, and life is extinguished. But chronic gastritis does not always present these well marked symptoms, so as to render its existence so obvious. The inflamation sometimes proceeds in so obscure a manner as to produce fatal disorganization before any serious consequences are anticipated. Eberly has given a case of this kind; of a child that appeared to labour under only slight gastric derangement, with occasional slight febrile exacerbations. Death occured (he says) on the third week of indisposition contrary to his expectation. Others have noted cases illustrative of the

insidious progress of this disease —

Causes - This form of the disease may be the consequence of the acute gastritis - But it is more commonly the result of irritating substances acting immediately on the surface of the stomach such as indigestible substances, heating and irritating articles of diet and condiments - Acrid medicinal substances, insufficient and innutritious articles of diet; with habitual exposure to damp and cold situations; or mental despondency - Intemperate use of alcoholic liquors - Repelled cutaneous eruptions; suppressed habitual discharges; neglected or ill managed dyspepsia - The depressing passions if they do not really excite the disease, are among the most powerful predisposing causes to this malady - The united causes of despondency and innutritious food appear to be peculiarly apt to give rise to this grade of gastric inflamation -

Prognosis - In this disease it is in general favorable

But when the disease is long and protracted, and intense pain is felt in the epigastrium, and perforation of the stomach takes place, the prognosis under circumstances of this kind is highly unfavorable —

Diagnosis — In the commencement of the disease it is difficult to distinguish it from dyspepsia. When the patient feels considerable pain in a particular spot, followed by vomiting soon after eating and a severe feeling of pyrosis attends, with redness of the tongue and tenderness of it and the throat, and the patient becomes weak and emaciated, we may be pretty well assured of the existence of Chronic gastritis — Much difficulty exists in distinguishing it from gastralgia a neuralgic affection not depending on inflammation; and the course of treatment being directly the reverse of each other; a circumstance which makes it the more necessary to know the diagnostic marks; which are

1st In chronic gastritis the pain is obtuse, often felt only on pressure, and is never absent when firm pressure is made on the epigastrium. In gastralgia the pain is often extremely violent, and when most violent is frequently relieved by pressure, is of an intermitting character, and radiates from the epigastrium — 2nd The tongue in chronic gastritis, which is generally red on the tip and sides, is covered in the middle with a kind of dun mucous crust. The breath is foetid, with a bitter taste in the mouth and much thirst. In gastralgia the tongue is white, saliva abundant, no thirst but rather a repugnance to liquids. — 3rd In gastritis the appetite is always bad, and sometimes there is a disgust of all kinds of food. The appetite in gastralgia is variable often greater than in health. — 4th In gastritis a small portion of food increases the patients suffering excites febrile symptoms, and digestion is always imperfect. Sometimes vomiting often retching and always nausea. In gastralgia the pain is generally

removed by eating, and that too in large quantities. Digestion is complete and often quick - diarrhoea is rare, and constipation frequently obstinate. The urine is pale, voided frequently and in small quantities. 5th. Chronic gastritis never fails to impair the process of nutrition, inducing hectic fever, characterized by hardness and frequency of the pulse, heat of the skin and evening exacerbations, loss of flesh and strength - a pallow countenance with a dark tinge, and finally death. 6th. In violent cases of gastralgia, there is difficulty of breathing, palpitation of the heart, wandering pains, and a sensation of coldness in the loins and extremities. Sleep is sometimes good, and the patient rises in the morning refreshed, and feels quite well, until his breakfast renews the gastric sensibility - Nothing of this occurs in gastritis - 7th. Those who are affected with gastritis, are melancholy, morose, and impatient; but not to be compared with those affected with

gastralgia - In gastralgia there is the greatest fear of death; or a perfect disgust of life, either in one extreme or the other - The patient watches the expression of his physician and is chiefed by the slightest abatement of the symptoms to be equally despondig in their return -

Pathology - Chronic inflamation of the mucous membrane of the stomach is very frequent; much more so than is generally supposed - In the chronic form of the disease, the inflamation is confined to one or two spots, the appearance of which are far more than usual; of a rough villous aspect, which can be readily felt by drawing the fingers over the effected part - The colour of the spots are various, assuming sometimes a slight red, often brown, or reddish brown appearance - The ulceration is often not confined to the mucous coat of the stomach, but proceeds to destroying the sub mucous, then the muscular, and finally the peritoneal coat, which being perforated the contents of the organ is discharged, which gives rise to an inflamation much more to be dreaded than the original disease as it always proves fatal; this is termed secondary peritoneal inflamation - The mucous fol-

icles frequently become enlarged in consequence of chronic inflamation, without affecting the gastric membrane. Haller gives an account of an instance of this kind, who found in the pylonic end of the stomach of a woman of 64 years of age, ten or twelve hemispherical bodies like papillae, with blackish points, and cavities full of purulent matter, variable in size; some of them being an inch in diameter. Some have supposed that a particular cause of gastric mucous ulceration might arise from some of the substances belonging to the corrosive poisons; that these poisons in many instances do induce inflamation, ulceration and erosion of the gastric tissue cannot be denied; and particularly of the concentrated mineral acids, is shown in the experiments of Emmert, Orfilla and Broide. The experiments do not corroborate the experiments of ulceration being produced, although inflamation does occur and frequently erosion. Added to these it is doubted whether arsenic itself will induce ulceration. For in the majority of cases in which arsenic has been swallowed and found in the stomach no ulceration has been recognized and the reason of it is,

that death ensues so rapidly after its administration, by the severity of its general operation, that there is not time between its administration and death for ulceration to take place—

Treatment—In this form of the disease we must pay great attention to the diet of the patient, as every thing depends upon a well regulated dietetic course—very mild articles are to be given, such as rice and milk, arrow-root, sago and tapioca—Leeching and cupping are our most effectual means of relieving this disease—Much benefit may be derived from blisters applied to the epigastrium, or what is I think much better the application of tartar emetic ointment until pustulation is produced—Dr. Eberle speaks highly of the use of Balsam copaivae in this affection—To palliate the distressing irritation which is experienced, we may administer a small quantity of Dovers powders at night—Regular alvine discharges must be procured every day—They must not be procured by cathartics given by the mouth as they

tend to increase the inflamation; but one or two purgative enemata must be administered at stated hours during the day; this will generally produce the desired effect—

Essay on Delirium Tremens

Submitted to the Provost Trustees and Medical Faculty of the University of Maryland for the degree of Doctor of Medicine by

John Oswald

of Maryland

# Delirium Tremens

Having at an early period, of my Medical Studies, been situated at the Baltimore City & County Alms-House, I had many opportunities of Witnessing Cases of this affection, in all its varied & aggrivated forms, and being compelled in many instances, to see the entire frustration of the most popular modes of treatment, We conceive the Idea; that the expence of time, requisite, to give the subject a thorough investigation, would be, but a trivial sacrafice, were it possible, to acquire a knowledge of the Pathological condition of the system, whilst labouring under a Malady, so awful in its aspect, & so dreadful in its consequences, and a capacity which would enable us to direct our treatment, according to the Peculiar indications of the disease. — Believing the views, which we have adopted, to be the result of correct inferences, drawn from an attentive Observence, of the varied symptoms, which characterise the disease in its different

stages

Stages, and the advantage of testing our Prognoses, by Post-mortem Examinations. We do not hesitate in giving them at-large. Trusting, that the efforts of a Tyro in Medicines, to disclose the secret operations of disease, in the complicated Mechanism of Man, will at least be respected, if our views cannot be adopted. —

From the happy results, which we have Witnessed in numerous instances, by a mode of treatment adapted to the views, which we have taken, we feel disposed, to lay them down, as a rule of faith, until experience shall teach us better, or the world be favoured with views, more plausable, & practice more Phylosophic. This disease, as it is most frequently meet with is Characterised by general inquietude, Tremor, continual Watchfulness, cold Skin, Clammy perspirations, delerious Loquacity, & Sensorial Illusions. These Characteristics, admit of very little variation, except, as regards violence. But are frequently Attented by others, depending upon

upon the peculiarities of the System; at the time, it is subject to the exciting causes. If there be a great pre-disposition, in the System, to deranged action; the Symptom will exhibit themselves, at a much earlier period, run their course much sooner & the Case is more apt to terminate fataly, than where the Constitution is vigorous. —

Fortunate for the humane family, that it occurs only in Habitual drunkards, Or with those who are accustomed to take, inordinate portions of Stimulating drugs, such as Opium &c. Otherwise we should in all probability, be frequently constrained to witness its fearful attacks, in the halls of temperance, and its alarming consequences in the Chambers of Sobriety. —

The disease although attributable to a single cause cannot be said, to be directly induced, by the application of a Stimulus, But by its abstraction, so long as the Ordinary portion of Stimulus can be taken it seldom supervenes. But if from necessity, sickness

or —

or temporary disgust the Ordinary potations are suddenly left off or greatly diminished. The activity of the Brain, becomes morbidly increased & mental disorder, in most instances, soon ensues. —
The disease usually commences with lassitude, general indisposition, a feeling of distress in the Epigusterum, loathing of food, nausia, & occasional vomiting, giddiness, with a sense of confusion in the Head, want of sleep, an anxious expression of Countenance, and tremor of hands, after a day or two, the countenance exhibits, an expression of alarm and suspicion. The sole concern of the Individual, labouring, under this affection appears to be of a selfish nature, The only topics on which he will converse, are those regarding his Safety & Circumstances. The eyes, are cast about, with quick & scrutinizing glances, or often fixed, apparently on one object, that attracts the attention for a while, & then suddenly withdrawn, The tremor increases to such a degree that he is scarcely able to convey

any

any thing to his mouth, He becomes irritable and frequently furiously angry, he is restless, continually, Walking, too, and fro, and is wholy unable to obtain a moments sleep. The manifestations of mental disorder, become more evident, from his loquacity, and the positive assertions made from time to time, that he is well. He now begins to be tormented with every thing that is ludicrous and disgusting, he fancies he sees devels, gosts &c and conceive the idea that his Room is infested with serpents. Dogs, cats, and mice, and loathsome Vermin, crawling over his bed, and Clothing, or that various individuals have entered his room, with the design of annoying robbing, or Killing him, to avoide these fancied realities, he runs to the door and Windows of his room, and attempts to escape, calling loudly and earnestly for helps from some one whom he imagines to be, near him.

From the Physical & mental agitation, which exist at this time, he vociferates, threatens & raves most violently

violently, imagining, that he hears strange voices, or some one calling him out of doors, to whom he will frequently reply, he often times fancies himself draged before a Court of Justice, to be tried for some offence, such as Murder and theft of which he declares himself innocent, and pleads for Mercy & justice in the most affecting terms, at other times he will fancy himself engaged at his usual occupation The Sailor imagines himself scaling the towering Mast, furling & unfurling his sheet with the wind, responding familiarly to his Mate, the Coachman the Carter, and the plough boy will, each curb their fractious Steeds, then boast of their Blood & bottom, as well as of their achievements. The Clerk Calculates, and disposes of his Money. The Prostitute, and the Rake, fancy themselves in the midst of their sensual associates exposing their midnight schems & unwarrantable connections. In the midst of these reviews, some frightful and disgusting Object, will again make its appearance

from

from the presence of which, he starts with terror & agitation, calls for help, declaring, that he is confined with some sinister intentions against him, requesting to be allowed the privilage to defend himself or go in pursuit of some busines he has on hand, he now becomes furiously delerious, & is with difficulty restrained; by any measures, mechanical means have frequently to be employed, to confine him to his Bed, or to any part of the room which he occupies. We have noticed in many instances, that individuals, labouring under this affection are not susceptable of feeling bodily pain. Fractures, Dislocations, Bruises & Burns of the most serious Character, are entirly disregarded, though exposed to the most irritating causes. When delerium supervenes to inflamatory affections accompanyed with pain. The principal disease, will so far disappear, as not to be easily detected even by the most experienced Practitioner, but is invariably reproduced, when the Brain & nervous

System

System become tranquilized. —
In no cases of this disease have we ever meet with a full or frequent Pulse. But have invariably found it quick & feble. The skin retains its natural degree of temperature and moisture, The tongue is usualy smooth and clean. Though we have occasionaly seen it covered, with a white moist fur The bowels are generaly torped, and there is an entire loathing of food, during the whole course of the disease (If at all violent) with an incasent thirst for cold water. —
The duration & violence of the disease, varies in different individuals, depending upon constitutional peculiarities, and the degree of exposure, the individual has suffered before the attack, sometimes slight tremor of the hands, with occasional delerium, and watchfulness, continues for a day or two, and then passes off, at other times the tremor & watchfulness will continue for four or five days without much mental hallucination —

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In some cases, all the Symptoms which characterize the disease in its most violent stages will continue for a week and upwards, and oftentimes terminates, either in Death, or the most ungovernable manic. —

As regards the Pathological condition of the System, whilst labouring under this Malady: much has been said by Medical Writers, ever since Intemperance in the use of Stimulating articles, has become a common vice. Some have conceived the idea, that the Brain & nervous System, become morbidly active, by the abstraction of an habitual Stimulus, by which its excitability had long since been repressed and blunted Others say that the proximate, and Essential cause of the disease, is seated in the Stomach, & that the Brain and nervous system are secondly affected. Among the numerous Cases that we have seen, We have never witnessed the ordinary Symptoms, which usualy attend inflamation

of —

of the Stomach; nor have we in Post Mortem examinations, found sufficient traces, to convince us, of its prior existence, Would the advocates of the Gastrice Pathology, but consider, that the Mucos coat of the Stomach and bowels, are liable to take an inflamation, in the latter periods of all pirohat diseases, and that increased vascularity, & sanguineous engorgement, are often produced in the last moments of life; their confidence in Post Mortem assurance would no doubt be shaken, and the Stomach ceases to be looked to, as the centre, from which all irritation is radiated.—

The most convincing proof that Gastritis is seldom or ever present in this diseases, is that of the individual recovering from an attack, though a very acute, and of long continuance, the function of degestion, are very little impaired, whilst the remedies which were used were eminently calculated to aggrivate that disease, had it existed. We have frequently observed our Patients partake of

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a hearty meal shortly after awaking from a tranquil-
-izing sleep, without the least subsequent inconvenience
on the presumption of inflamation, in the stomach,
such an approbation would deserve the richest censure
or who, that is at all conversant with the disease, would
presume for a moment, that fifteen or twenty hours
sleep, would give tone to the organ thus affected, and
subject for days together, to the most irritating causes
How to account for this phenomina, of a sudden and
almost perfect restoration of functional action in
this disease, alone, we know not. —

The Pathological views which we have adopted are
that by a long continued subjection of the body to a
stimulus, and its sudden abstraction, there is an
irregular performance of functional action in-
-duced; as a necessary consequence. The Brain and
nervous system, being principally acted upon become
preternaturally and morbidly excited; whilst every other
organ in the body, is in a torpid condition. The action
of the heart and Arteries is remarkable feble. The Glandular

System

System is in a great measure inactive The alimentary tube torpid, and frequently load with morbid secretions all of these organs perform their functions with difficulty, owing to the abstraction of power, which is evidently concentrated in the Brain and nervous System, and causes them to become morbidly sensative. The disease cannot in general be considered a fatal affection, when it occurs in a simple and uncomplicated form, and in System not yet broken down and depraved by a long continued course of Intemperance. But if the individual is attacked during the prevailence of violent forms of fever, or whilst labouring under Chronick organic inflamation, produced by habitual drunkenness, it almost uniformly and rapidly proves fatal, when the delirium becomes constant, the pulse rapid, and very small, the extremities cold, and covered with perspiration. the Pupils small and Contracted, with a twitching of the tendons, and an agitative motion of the Muscels of the face, death may be regarded as inevitable. Some with serous desperation and convulsions is particularly unpromising

Tranquil

Tranquil Sleep even of short duration, will always announce a favourable tendency, and so long as it cannot be obtained the individual is not considered out of danger, though the violence of the symptoms may abate, as regards our views in regard to the treatment of this affection, we do not feel disposed to adopt the notions of practice, which are held forth by Medical Writers generaly, as a sine qua non in every form of the disease. Nor do we desire to beat down for ourselves, an undeviating track, hedged round with prejudice and egotism. But ready and willing at all times to be guided by circumstances, and the influence of a well grounded faith in the success, which may have attended such a course. —

Though all agree, in the necessity of quieting that preternatural excitement of the Brain and Nervous System, yet different modes have frequently been resorted too, in order to obtain the same object, and are reputed to have been eminently successful, and recommended as worthy of trial in every form of the disease.

With due respect to the opinion of individuals, who have

have adopted different modes of practice, we will only endeavour to point out, wherein they do not meet our approbation, We have never seen the necessity of adopting the System of blood leting so much relied on by several Practitioners of high standing in the profession, whose views on many subjects, will insure them a name in succeeding ages, and will be looked upon by the then Practitioners, as his, polar Star, to guide him successfully through the entricacis of his Science, We would view this measure, as fraught with eminent danger to our Patient, should we be compelled to resort to it except it were in the very incipient stage of the disease, before the ordinary inebriating Effects of the Stimulus had subsided, accompained with a plethoric condition of the System. We once saw the bainful effect of this mode of practice on an individual, in whose case the Lancit was loudly called for, by a collocation of circumstances, Shortly after the abstraction of a moderate quantity of blood from the arm. He sunk into a low typhoid state, from which he gradually merged to the grave, in spite of all the remedies employed to

save

save him, and such is the result, we would ever anticipate from this mode of treatment, in a well confirmed case of delirium tremens. The action of the heart and artery is invariably feble, and no evidence of sanguineous congestion in any of the organs of the body, sufficiently perceptable to demand the devitalizing agency of the Lancet. That many have recovered under this plan of treatment; we have no doubt. But that they were cases of equal violence and duration, with those generaly admitted into this Institution, we can scarcely admit, without calling into question, the propriety of the measures, resorted to for their restoration. Though we object to general bleeding, as a measure uncalled for, and attended with eminent danger to the life of our Patients.— Yet we admit that we have on several occasions, witnessed the most happy effects, from the abstraction of a few ounces of blood, by the use of the cups on the temples, or the nape of the neck, in case there was an inordinate determination of blood, to the head. —

As regards the emetic plan so favorably spoken of by some we have always dreaded its general debilitating effects, and

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consequently debred from giving it a trial, we conceive of no good effect that can be obtained by it, except the mere evacuation of the Stomach and bowels which in violent cases we should always make a secondary consideration, except to a small extent, when we have evidence, that the Stomach and bowels are surcharged with morbid secretions. With regard to the stimulating plan, recommended and pursued by some Physicians, and highly approved by every thorough going son of Bachus, we can say very little, as we have not paid sufficient attention to Homopathie, to determine its modus opperandi. That the disease may frequently be diverted, by the judicious adminstration of Alcohol, in the incipient stage, we have a doubt. But how to procure sleep, the grand desideratum in violent cases of this affection, by the adminstration of Alcohol is beyond our ken, unless we make the Patients dead drunk and run the risk of depriving him of a sober exist to the grave. — Or if thus treated successfully is it not likely that Individuals will leave the sick chamber, or the wards of our Publick Institution inspired with tenfold encouragement

to

to resume, their former habits of intemperance. —
As we have had, but few opportunities of treating this disease in its insipient stage, we have scarcely had experience enough to justify us in recommending our mode of treatment though it has proved invariably successful either in entirely checking the disease, or preventing it from assuming a violent Character. —
The majority of cases, when admitted into this Institution are of a character, which if the term be not too foreign we will term Chronic. The majority of them, occuring in Individuals whose constitutions are much impaired by a long continued course of intemperance, and owing to the moral insensibility of the degraded circle in which those individuals move, no interest in their situation is ever felt, by their associates, and the thought of removing them to a situation where relief might be procured, only occurs, when they have become an actual, nuisance, on the streets and allays, or dangerous inmates of the wretched hovels, that serve them as a shelter, under these, and similar circumstances, the disease, is frequently

found

found to be, of four five or six days standing, and will have assumed the asthma of its violence before Medical aid can be obtained, under circumstances so discouraging we are frequently induced to anticipate the most unfavourable consequences, yet as often have we witnessed a favourably issue in those cases by a Judicious, and well regulated mode of treatment.—

Having adopted the most popular idea of the day. Viz; that opium is the sheet anchor of our hopes in every case of this affection, We will now proceed to a description of the Modes of adminstration and its accompaniments having been taught by a perusal of the most poplar Essays on the treatment of this disease, and having Witnessed the practice of the Senior Student of the Alms House for near a year. I was led to believe, that it was preferable to adminster Opium, in the form of tincture after the treatment of those cases, devolved upon me. I struck the course which others had pursued with success. and though not more unsuccessful than they. The work appeared too tideous, and being convinced from the

knowledge

knowledge of a specific agency in Opium, that the Amount of Laudanum, which I frequently saw administered in cases of this disease through the period of Three or four days was vastly more than was necessary, to produce the desired Effect, provided the powers of the System, had been accommodated for its reception, knowing of no articles in the Materia Medica that was so likely to produce this Effect as Tart. antm or Ipecacuanha. We concluded to give them a trial, on more mature consideration however the former was rejected, on account of its irritating & debilitating tendency, and the latter selected and administered, in combination with Opium. The result has hitherto been more favourable, than could have been Anticipated. The System is seldom disposed to resist the combined influence of these articles more than twenty four hours, and frequently not that length of time, and if Sleep should not be induced sooner, than when Opium is administered alone, the Patient is evidently more quiet. ———

Our first prescription generaly consists of Ipecacuanha

in

in doses sufficiently large to produce slight Emesis, our object in doing this is to free the stomach, of its, morbid contents, with which it is necessarily loaded, where no Medicines have been taken, and if allowed to remain, will add in no small degree to increase that irritation, which already exists. But proper caution should be exercised in the administration of this article, should it be carried to too great extent, debility will ensue, & a frustration of our subsequent measures will be the consequence, After the nausia and vomiting, produced by the Specacuanha has some what subsided, I generaly commenced to give a grain of Opium and a grain of Specacuanha in combination every hour, If the case threatned to be Obstinate and the Medicine had no evident effect the doze was increased to a grain and a half of each, larger dozes I have never had Occasion to give, for the purpose of producing a sufficient degree of nausia to induce the Patient to be quiet, and Under these circumstances, the System soon becomes susceptable to the impressions of Opium, on which our main reliance must ever be placed

This

This course has always been continued until, there was a manifest disposition to sleep, which seldom exceeded twenty four hours. good and nourishing diet we have always found advantageous, where the Patient could be persuaded to take it, subsequent, to recovery which usualy succeds twelve or fifteen hours undisturbed sleep, we have never found strict attention necessary to the diet of the individual, except in complicated cases, where the function of digestion are impaired from some other cause, uncomplicated delirium tremens is never followed with impaired digestion after recovery. - Since we have adopted the mode of treatment just detailed, we have never had occasion to resort to any other measures to aid in quieting that irritable condition of the System. The tranquilizing influence of the Warm Bath, formerly so much resorted to, for the cure of this disease in this Institution, we have never had occasion to use, though we still view it as a powerful agent in obstinate & protracted cases. - The views this far given are inferences drawn from actual

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observation in a respectable number of cases, among which it is natural to suppose a variety of character must have manifested itself, which tended to give interest to our investigations, and confirmed us in our opinion that a knowledge of constitutional peculiarities will aid us much in the successful treatment of the disease

# Thesis

on

# Inflammation.

Written for the Inspection

of

The Honorable Provost

and

The Medical Faculty

of the University of

Maryland.

by

James W. Poindexter.

of

Virginia.

March 1834.

To,

Dr. Robley Dunglison.

This Thesis is inscribed.

in token

of

The high respect entertained,

For his professional talents,

As well as, private virtues;

by

his pupil

W. T. R.

On



## "Inflammation"

As there is no subject Embraced in the scope of Medical philosophy of more importance consideration, than that of inflammation, there is perhaps none that has elicited more attention, or been treated more ably; hence it would be fruitless presumption, to attempt originality.

The term Inflammation is not difficult of definition, It has from the earliest dawn of the science, been used to denote the existence of an unusual degree of excitement in any of the tissues of the living human machine,— Its existence and symptoms are developed by an unusual degree of Redness, heat, Swelling, and pain, in any of the organs of which the human body is composed, these four Morbid phenomena occur simultaneously, and are uniformly accompanied, by an increased quickness of the pulse, and an unnatural warmth of skin, with more or less of the signs denoting fever — hence the distinction of inflammation or inflammatory

tory diathesis, into those of a local, and those of febrile or constitutional character—
There is no one familliar with the different authors upon this subject who is not impressed with the belief that the terms originally used in the different languages to denote the states of inflammation, were employed to express only different or particular forms of inflammatory and febrile diseases— It is known that climate will modify the form and even in some measure change the nature of diseases hence the probability that the words which in oriental literature, have been adopted to express those combination of symptoms, to which, in English nomenclature, we arrange under the head of Inflammation or fever may have been applyed to distinct, and different, forms of Inflammatory & febrile diseases— In the original Greek to which we are so large ly indebted for the nomenclature of Science, the terms Phlogosis and Phlegmon are used to denote the redness of the skin in Inflammation so characteristic of the morbid phenomena, as al-

as of the skin in fever serving to suggest the similarity of that state to fire gave rise to the terms, pyretos of the ancients, and pyrexia of the modern Physicians, Inflammation, and fever, words so nearly allied in their primitive and figurative signification are of late regarded as terms purely technical neither intending to express the distinguishing characteristicks of the two very distinct, and dissimilar trains of morbid phenomena, the occurrance of which they are respectively employed to indicate and specify.

There can be no rational education in Physic unless it is laid in a minute and accurate acquaintance with the appearance and treatment of the different kinds of febrile or Inflammatory diathesis — However necessary it is that the practitioner should be thoroughly acquainted with the morbid phenomena, of fever, it is now very generally believed the knowledge of the phenomena of Inflammation, is not less important of his general practical utility, either to the general practitioner or the Surgeon; we need only remark, to prove the correctness of

this

this view of Inflammation, that of all the morbid affections to which the human body is liable, Inflammation, is not only the most distinct in its form and the most important in its consequences; but by the most frequent in its occurrence.

The human system in health exhibits no symptom of this morbid phenomenon but it can receive no external injury of which Inflammation is not the immediate effect; and there are but few local diseases of which it is to be regarded in some degree a "concomitant Cause, Symptom, or Consequence" — There is no distinguished Surgeon of the present enlightened age who is not fully aware of the importance of an accurate knowledge of those singular, and diversified appearances, the various textures are made to assume by the presence of this disease; the knowledge of this fact has established the pathology of Surgery; perhaps, the most important branch, on the solid basis, of observation, experiment, and analysis, and forms a new era in the history of this Artem divina — The local Symptoms essential or common to Inflammation are four Redness, Pain, Heat, & Swelling: it

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is perhaps necessary that I should include in this enumeration the sensation of throbbing or the presence of increased action in the vessels of the part affected, the sensation of throbbing however is not a necessary consiquent, of every species of inflammation and the increased vascular action is rather infered from other phenomina.

The Redness in Inflammation is greatly varied in its degree and kind by the violence of the affection and the nature of the part in which it occurs; in its incipient state it depends upon the influx of blood, into the vessels of the part inflamed - It is produced either by the distention of those vessels which convey a small quantity of red blood * or by red particles entering into vessels which in a healthy state only admit serum, the first developement of inflammation of the skin exhibits a redness bearing a very striking analogy to the cheeks in the act of blushing, and may be as soon excited by the topical application of stimulus. When produced artificially it extends to a greater or less distance from the point to which the exciting cause was applyed Its progress is more distinctly seen in parts naturally

* and consiquent debility

naturally transparent, as in the tunica conjunctiva or the membranous linings of the cavities of the Chest or abdomen — In these parts it is distinctly seen to extend in proportion to the enlargement of the Capillaries, — Pathologists have long since known that fact that the smaller Blood Vessels and those which are capable of conveying only serum, are enlarged & increased during the existence of Inflammation: These appearances can be detected by the naked eye and are rendered still more obvious by inspection with the Microscope and by injections after death.

We can only account for the pain accompanying inflammation by the Change induced in the nerves — It varies from the slightest increase of sensibility, to the most excruciating torment, It is not satisfactorily ascertained whether this increased pain and sensibility occurs before the increased afflux of blood into the Vessels of the part, but is known that this increased afflux generally augments the pain, It is probably induced partly by an unnatural distension of minute Vessels and fibres of the part, and partly by pressure from swelling on the ~~Inflamed~~ parts of the in-

flamed,

flamed part in many instances. It is sensibly increas= by each contraction of the heart, constituting what is termed pulsatile pain: the kind and degree of pain is continued in some instances, varying much in the different kinds of inflamatory affections; in others it is periodic, and alternates from a= cute to dull; from prickling to itching to lan= cinating or throbing — Hence it is nd unnecepa= ry to remark that some parts which in health have little or no sensibility, in Inflammation are extremely sensible. This is the fact with regard to the ligaments cartillages tendons bones &c. When conjoined with other con= stitutional symptoms pain is one of the surest and most infallible marks affor= ded us of the existence of internal Inflam= mation.

Heat: The cause of the development of heat, has elicited much controversy and is still a subject of doubt: There are however nu= merous theories on the subject some of which are obvious ly vague and uncertain. If we apply our hand to an inflamed surface in some instances, the sensation of heat is appar= ently so great as to communicate an unpleasant

degree

degree of warmth to the hand — here judging a "priori," we might be greatly deceived, for it has been satisfactorily ascertained by the truly celebrated Hunter that the heat never arises above that of the blood when it issues from the engine of life — The Heart — That the temperature is slightly elevated in inflammation has likewise been proved by that gentleman, for on one occasion when he had operated for Hydrocele he introduced a Thermometer into the tunica Vaginalis applying it for some minutes close to the side of the testicle, It indicated a temperature only of 92° — When however on the next day after inflamation had supervened the Thermometer was introduced as before, the temperature was found to have risen to $98\frac{3}{4}°$. "Here" says Mr Hunter "was an increase of temperature of $6\frac{3}{4}°$ but even this was not probably equal to that of the blood at the source of the circulation in the same individual." — he has repeated the same experiment more than once with nearly the same results: So we see from this experiment that the temperature apparently so great is but slightly increased.

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as it regards the cause of the development of heat in Inflammation; some have supposed that, it was owing to the friction produced in the blood vessels by the increased rapidity with which the circulating fluid passed through their caliber, — others believe that it is owing nearly to the increased quantity of blood sent to the vessels of the inflamed part — But may it not depend upon the excitability of the nerves of the part, connected an increased susceptibility of of the powers of Calorification thus giving rise to the evolution of a greater quantity of Caloric? —

It is an interesting phenomina and perhaps one which should not be passed over; that the surface of an inflamed part is uniformly dry, and that as soon as perspiration takes place the heat is diminished — It also appears that as soon as the pain heat & swelling of an inflamed part is diminished perspiration makes its appearance,

Swelling: The swelling in Inflammation is invariably accompanied with stretching and tension — In the first stages is seems to be induced entirely by the unusual influx of blood, but this is not alone the cause of the increase in the

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progressive stages of Inflammation, an unusual quantum of serous fluid is poured out in the interstices of the cellular membrane — this produces a kind of swelling that pits on the application of the finger and is called œdema — Swelling and distention would seem to be owing to the inflamed vessels being unusually distended with blood and in part on the effusion of serum and other fluids into the cellular membrane — Its degree and the distance to which it extends depends very generally upon the violence of the attack but chiefly perhaps upon the structure of the part affected — There is a particular kind of swelling accompanying inflammation of the Skin and Cellular membrane in which the parts feel as hard as bone and in which the hardness continues after the total disappearance of other symptoms. This degree of swelling is thought to depend on the exudation of Coagulable Lymph —

Inflammation has been divided into acute and Chronic, Healthy and unhealthy. The division however is perhaps arbitrary and unproductive of but little practical utility —

Causes

## — Causes —

The signification of the word cause in its literal sence, is the object or event which immediately precedes any change and which under similar circumstances is always follow= ed by similar Changes, — But in most med= ical writings and particularly as applied to the objects or events which produce inflamma tion, the term cause is used in a much more extended and indeffinite sence; I shall restrict myself to its literal deffinition.

There can be but little advantage derived from a systematic arrangement of the Causes of Inflamation for what substance in nature is there that may not by a certain application and under some circumstances excite the disease,

The most common division of the direct causes which excite Inflamation, is into. Mechanical, and Chemical. Among the mechanical causes we may reckon 1st pressure — long continued is very liable to excite Inflammation 2nd, Friction — 3rd, Bodies which bruise — as in contusion If however the force be violent it is liable to excite mortification, — Lacerations Punctures

Fractures, Luxations may be enumerated as mechanical causes; may even any foreign body whether introduced into the System or formed within the body itself —

Chemical Causes: To this class belong all substances capable of exciting inflammation in any part, to which they are applyed without appearing to produce any visible Mechanical effect: Thus high degree of temperature, acids, alkalis, noxious gasses, blisters, and all the class of Rubefacients may act as chemical causes — Every part of the body is liable to be affected by the above enumerated causes, and they may act differently on different individuals according as there is a predisposition in a part to take on inflammatory action — As a general rule parts highly endowed with vitality are more liable to take on inflammation than those more remote from the Center of circulation ——— The Terminations of inflammation it must serve our present purpose nearly to enumerate — Those commonly mentioned, are Resolution, Adhesion, effusion suppuration ulceration, granulation &c.

itriza

a trepation & Mortification, — These constitute a series of morbid phenomina highly interesting to the Surgeon,

## — Treatment —

In the treatment of Inflammation the first and primary object of the Surgeon, is to remove or allay the Constitutional as well as local Symptoms, and if popible to procure Resolution, — This may often be affected by removing the Cause of the disease, Hence in all diseases he should if popible discover the cause which gives origin to, and keeps up the diseased action and remove that Cause as soon as pospible

The Remedial agents used to subdue Inflammation may be, General or Local, among the former may be included, general blood letting Purgatives, diaphoreticks and low diet — the latter topical blood letting blisters, cold, with various other external applications,

General blood letting should only be employed where there is the appearance of some constitutional Symptoms, — The quantity of blood to be drawn depends on the

extent

extent to which the disease has progressed - The organ in which the disease is situated - The constitution of the patient his temperament Idiosincrasys &c, When Inflammation is seated in any vital organ, blood should be drawn in small quantity and often repeated for fear of bringing on depression, from which the individual might perish

The Pulse is generally taken for a guide but it may often be fallaceous, If however it be full, hard strong and frequent, rising under the use of the lancet; we may generally bleed —

The existence or absence of the buffy coat may also be a guide but this is also fallaceous, for it often exists in old and other persons when there is no Inflammation — There is no, more certain indication of Inflammation, than the continuance of pain - And so long as it exists we must not fear to abstract blood -

Purgatives are valuable auxiliaries to the lancet — Those of the saline character are generaly used - they act by the refrigerating properties they possess; as well as

deriving a large quantity of fluid from the system — Diaphoretics; have been much used those of a nauseating character are to be prefered. Warm bath is also a good remedy proveing beneficial not only by restoring the secretion of the Skin but by derivation.

Diet: The diet should be of a low farinaceous character; excluding all animal food and stimulating drinks especially those which contain alcohol. In fine a strict Antiphlogistic regimen should be enforced — —

Among the local Remedies Topical blood letting either by Cups, leaches or scarification; is the most potent of all Blisters have also been used with advantage either immediately over the inflamed part or in its vicinity —

Cold, is also a valuable remedy in inflammation Cold water, Ice, or an evaporating solution — as Muriate of Amonia, ether applyed to the inflamed surface is eminently beneficial, In Inflammation of the chest and abdomen, cold should be avoided, as rather deliterious than otherwise.

Position should likewise be attended to, which is also a valuable remedy. In inflammation of the extremities, the limb should be placed in such a position as to derive as much blood as possible from the inflamed part, at the same time keeping the limb perfectly at rest; and even by attending to these circumstances, trifling as they may at first sight appear; the patient may be relieved of much suffering, pain and distress. ——.

De Vita,

has cogitationes de salutaria,

ac festinata,

Pro gradu Medicinae Doctoris,

Praefectis, Curatoribus

atque

Arti Medicinae Professoribus

Terrae Mariae Universitatis,

humillime proponit

J. B. Palmer,

Baltimoriensis.

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MDCCCXXXIV.

# De Vita.

Magno dolore in lucem edite, in hoc tam exiguo vitae curriculo in labore corporis, in contentione animi perpetua versantes; continuis studiis, nocturnis lucubrationibus sudoribusque diurnis exercentes, "Sisyphi saxum" volvimus, "in vento et liquida scribimus aqua", solum operis praemium ut taedet nos vitae, certo scire nihil nisi abeundum est nobis "per iter tenebricosum,
Illuc unde negant redire quemquam".
Ecce sors sola, historia universa hominis, utrum superbia inflate, an ictu aspernationis atque dedecoris percussi!

Nihilominus omnibus nervis omnibus agitur, in ultimum deferre quod nemo avertere possit, ac mortis metus omnium timorum maximus, facit

vitam leto graviorem agi, luctu & moerore, et praecipitat fata quae velit in aeternum proferre.

Sed humanum est solum affici hujusmodi dolore animi regulis philosophiae minime conveniente, et omni cruciatu se affligere, unde nihil commodi, nihil lucri unquam expectandum sit. Ferae sylvestres, quos, ex mira summae sapientiae stultitia, ut humiles atque stolidos dedignatur, hi nunquam fugaces brevis aevi horas, cura & lachrymis consumunt, propter ferrea veterum decreta sororum, adamantina Parcarum jura, quae Jupiter ipse rumpere non posset, hi sine omni cura, "sub ramis arboris altae" corpora deponentes, "quasi Lethaeo rore soporati," dulcem quietem carpunt. Virida herba praebet illis cibum, et aqua nitida, lachrymae quae saxo erumpunt aspero, sitim felicium sedare, flumen argenteum saltu ad terram mittit. Aeque ac homo

vitam Naturae reddant necesse est, ~~[illegible]~~ ~~[illegible]~~ sed adventus deletoris non semper ob oculos animi versatur, at brevi spatio perdurant mortis augores. Artus non alternis pereunt, viva semper cadavera circumferenda, et nullo morbo deflorescit formae dignitas, nullis indomitis atque effraenatis animi cupiditatibus vires eorum decrescunt, sed Oblivio mollis, dulce natans sensibus, animas surripit, et nunquam lucet Aurora ostendere vitam ludibrium Morphei fuisse. "O terque quaterque beati!" quorum vestimenta, manu cunctipotente praeparata, tempestatibus, sine ulla solicitudine ipsorum mutantur; ultra humilem fortunae gradum et ornatos animi modicos non aspirantes, aliis sua bona nunquam invidentes, quam praeoptatus est status eorum humano excelsis facultatibus ac molestiis superbis!

Quamdiu vitam ac mores ad jura Naturae componebat, antequam

Dea, propter leges perfractas exacerbata, cesserat cupiditatibus suis resistere, homo se dedere solebat placide fatis, magno animo diem obvius extremum, qui omnibus sub luna positis impendet. Sed quantum est hominum regni Saturni luget filios majorum vestigia deseruisse, & simplicitatis antiquae virtutes locum resignarisse luxus recentis artibus, quae, pari passu, corporis voluptates et animi solicitudines amplificantes, faciunt consummationem, Rerum Natura exactam, infelicitatem veram terribilemque haberi.

"O miseras hominum mentes! O pectora caeca!
Qualibus in tenebris vitae, quantisque periclis,
Degitur hocc aeri, quodquomque est!"

Sic exclamat Lucretius, quo poeta dulcior nunquam cantavit, et sic vocem Rerum Natura addit.

"Quid tibi opere est, mortalis, quod nimis aegris
Luctibus indulges? Quid mortem congemis ac fles?

Nam gratum fuerit tibi vita ante acta,
priorque,
Et non omnia, pertusum congesta quasi in vas,
Commoda perfluxere atque ingrata interiere;
Quur non, ut plenus vitae, conviva, recedis,
Atque animoque capis securam, stulte, quietem?
Sin ea quae fructus quomque ex, periere profusae
Vitaque in offenso est; quur amplius addere quaeris,
Rursus quod pereat, mali, et ingratum
obcidat omne?
Non potius vitae finem jacis, atque laboris?
Nam tibi, praeterea quod machinor, inveniamque,
Quod placeat, nihil est: eadem sunt omnia semper.
Si tibi non annis ~~[illegible]~~ corpus jam marcet
et artus
Confectei languent; eadem tamen omnia restant,
Omnia, si perges vivendo vincere secla;
Atque etiam potius, si nunquam sis ~~[illegible]~~
moriturus."*

Finem igitur faciamus, vanis
luctibus deplorare, nos mortales esse

* Lucr. De Rerum Nat. L. III. v. 945 & seq.

creator, sed "dum vivimus vivamus," non blandiciis praesentium voluptatum delinitis, ~~[illegible]~~ caeterum tali potius usu facultatum quae nobis pertinent, rationi ac philosophiae consentaneo, quamdiu incertae vitae triplices sorores atra fila protrahunt.

Sed me longius tulere hae cogitationes ethicae quam mihi in animo primum fuit. Nunc ad rem vertamus; atque hic, ut a principiis progrediamur, videndum est quomodo agit his vitalis, quae alii Animam, alii Animum* appellant.

Elementa, quorum concursione corpus animale fingitur, quum alio modo in appositionem allata, adhaesitatione inter se, varias res atque volatiles gignunt; quarum ad formationem inclina-

*Lucretius ipse inter Animam atque Animum, non, — si sic dicam de philosopho ac poeta, qui tali perspicuitate, doctrinas exposuit Epicuri, quem ego, ut Bruto

tio perpetua exercitata, necessitudinem ~~fact~~ facit materiae faculentae continuo ejiciendae. Nunc addita vitae causa semper se occupare videtur, oppugnante huic atomorum proclivitati ex illis discedere & hinc exoritur necessitas cibi capiendi, vicem earum particularum supplere, quae, ut inutiles seu nocentes, variis modis, urina, sudoreque & multis aliis rejiciuntur. suo Cicero perillustris dicit, arbitror unum vidisse verum, maximisque erroribus animos hominum liberavisse et omnia tradidisse quae pertinerent ad bene beateque vivendum, — accurate distinguit. His verbis Animum depinxit.

"Primum Animum dico, mentem quem saepe vocamus,
In quo consilium vitae regimenque locatum est,
Esse hominis partem &c. L. III. v 94.—

Minus accurate Animam descripsit, sed illam credit, si recte intelligerim, "permixtam corpore toto, suscipere hunc motum quem sensum nominatamus" & "dimissa

Sunt autem quidam e philosophis qui putant, quoniam atomi diversae, ex quibus corpora nostra finguntur quum seipsis relictae, ~~[illegible]~~ quibusdam latinè innominatis, sed Anglicè definite compounds designatis, exordium dant, ergo vitam conservandam esse legibus ipso facto perfractis Naturae, quae denique anima, corpus caret undique sensu." Et alio loco, "Animum atque Animam," dicit, "conjuncta tenere
Inter se, atque unam naturam confacere ex se:
Sed caput esse quasi, et dominare in corpore toto,
Consilium quod nos Animum, mentemque vocamus:
Idque situm media regione in pectoris haeret.
Heic exsultat enim pavor ac metus; haec loca circum,
Laetitiae mulcent: heic ergo Mens, Animusque est.
Caetera pars Animae, per totum dissita corpus,
Paret, et ad numen mentis, mentemque moretur:
Idque sibi solum per se sapit, et sibi gaudet.
Quom neque res animam, neque corpus commovet unâ.

in Mortis curriculo triumphum agit. Sed parum, ut opinor, valido tibicine pulta est haec opinio. Sufficit ut ejusmodi argumentis respondeam: primum, vivimus; deinde, satis constat plurima exempla alchymistis notissima esse, quibus substantiae maxime insociabiles, nonnihil

Et quasi quom caput, aut oculus, tentante dolore,
Laeditur in nobis, non omni concruciamur
Corpore; sic Animus nonnunquam laeditur ipse,
Laetitiaque rejet, quom caetera pars Animaï
Per membra atque artus nulla novitate cietur.
Verum ubi vehementi magis est commota metu mens,
Consentire animam totam per membra vidimus;
Sudoresque ita, pallorem que existere toto
Corpore, et infringi linguam, vocemque aboriri,
Caligari oculos, sonere aureis, subcidere artus."

De Rer. Nat. L. III. v. 136 seq.

Magis, ut opinor, in his versibus distinctionem quam dissimilitudinem poeta inter Animum & Animam instituit.

temporis retardatae sunt, etiam illis inexpertis, affinates dominantes exercitare.

Virimus, inquam. Ecce nodus sophismatis, ut mihi quidem videtur, plane dissolutus. Clare, pro certo, notum est animales existere, eo modo, quo, eorum problemate, fieri non posset. Praeterea autem, nihil est ab illis propositum, quod, aequa ratione, non alicubi esse cogatur. Maxima difficultas eo invenienda est, quod, ut arbitrant, hae, Ammonia, aqua, acidum carbonicum &c, saepissime et inde, inferunt, naturalissime, elementarum concursione nascuntur. "O acutos homines! quam paucis verbis negotium confectum putant. Ea sumunt ad concludendum, quorum iis nihil conceditur. Conclusio autem rationis ea probanda est, in qua, ex rebus non dubiis, id quod dubitatur efficitur."* Nunc praemissa et consecuta aeque ac constantissime nego.

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*Cicero: de Divinatione L. II. cap. XLIX.

Imprimis minime concedendum est, quo concesso, nihil illis prodest, ex, in quae, post mortem, elementa animalia conversa vidimus, saepissime formari, elementis seipsis, nullo jurante, relictis. Facut in appositionem feramus corpora aquae genitalia; - aquam obtinebimus? Nunquam, certe, nisi vi ex electro. Nihilominus omnia aquae faciendae necessaria habemus, et hanc, verum naturalissimam, nullo modo per se formatur. Quid nunc? Vim quamdam, ais, affinitatis agere! "O plumbeum pugionem!" Facile vim agere fatendum est; sed quis est qui nesciat una vi, unam, altera vi alteram produci? - minore, aquam; majore, si tibi vis, animal formari? Quis sapientium dicat utrumvis contra Naturam esse?

Porro autem repugno, et ad confirmationem adversarios lacesso, totam quantitatem horum, dissolutione genitorum, Naturae animatae materiis solidis

majorem esse. Maximisque rationibus, hoc via fieri posse constat. Quis enim, ex uno, duo faciat – quomodo, minore, majorem efficias? Tunc nobis concedendum est aequales esse, et si aequales ad finem disputatio ferretur. Sed assertionem iterant, organica per se, inorganica nunquam per se formari: jamdudum hoc, aquae exemplo, ut parum accuratum confutari, et, omni asseveratione, alchymistorum maximorum et meae propriae notationis auctoritate affirmo, synthesibus via ulla ejusmodi corpora subtilia obtineri posse.

Quid, igitur, opus est, quaeso, disputatione? Corpora ista putredine animali genita, demonstravi nec crebrissime, caeteris paribus, nec per se unquam formari. Quid amplius de rebus organicis dicatur? Quid est quod non ad Naturam ambo haberentur?

Hoc solum rationibus evin=

cere tentari, vitam, Natura regnante, nulla vi, sine mundi Matris consensu se sustentare posse. Procul a me absit dicere, quae sit illa vis vitalis et unde exorta." Anima sit Animus ignisve nescio, nec me pudet fateri nescire, quod nesciam."*

Ab ipso temporis exortu, philosophi, poetae, medici vitae mysteria mystica, in ipso coelo supremo recondita, quae profanum vulgus scire non convenit, ex umbra in solem traducere, summo studio incubuerunt. Sed, O spes fallaces! Opera & oleum studii perierunt.† Nullum operis pretium esse

* Tusc: quaest: L. I. cap. 25.-

† Sic, in hanc rem, dicit Fodêrî: "La plus grande, la plus difficile question que l'on puisse faire, après celle sur Dieu même est cette demande; qu'est que la vie?- Interrogez ce philosophe solitaire qui consume ses jours a méditer sur les mysteres de l'existence

hoc unum exemplum de Van Helmont, quoris doctissimo doctior, omnibus sufficit; "est nempe spiritus vitalis," dicit, "lux originaliter in fermento sinistri sinus habitans quae illuminat novos spiritus; ..... ergo vita humana est

& de la mort; contemplez ce religieux cenobite de l'Orient que traversa un siècle de privations et de douleurs, dans l'esperance d'un eternel avenir: contemplez l'oiseau des forets sur le nid de sa naissance, l'insecte poursuivant l'objet de ses amours, le poisson voyageant dans la profondeur des abimes, la fleur des champs ouvrant sa simple corolle aux rayons du soleil, demandez a tout ce qui respire, qu'est que la vie? — La terre et les cieux vous repondrons: Admire, etudie: cette existence dont tu enquiers est le souffle même de la Divinité."

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lux formalis et modo et ipsa anima sensitiva lucida, adeoque hujus sufflationem mors e vestigio sequitur." — Sic a philosophis somniatur!

Quoties in hanc quaestionem veni, rerum universitatem, stellas semper volventes, solem luciferentem, cum luna ejus sorore, simul cum omnibus locum in Rerum Natura tenentibus, vitae universae afflatu agitari; unam animantem stellarum errantium atque insectorum reptantium abjectissimi motus regnare; omnes viventes portionem quamdam muneris universi, quasi mutuatam, recipere.

Etiam atque etiam videre gaudeo auctorem doctissimum,* dissertatione sua de vita,† hunc modum rem contemplandi adoptâsse. Sua sententia, si rerum universitate nullus fuisset motus, nunquam existere potuisset corpus animale, sed, nostris membris,

*Fodéré. — †Diction: des Sci: Med: vol 57

pariter ac mundo universo, motum esse arbitratur et ex potentissimis, (se, motibus) indubite oriri minores; ergo judicat nos quasi clientes esse corporum ingentium "extra flammantia moenia mundi." sempiterne volventium.*

* "Car," ait Fodéré, dissertatione citata, "s'il vegete sur nos corps des cheveux ou des poils à la manière des plantes; s'il se develloppe en nous des vers intestins et d'autres animaux parasites qui tous s'accommodant de nos humeurs se proportionnent à notre nature, et participant à nos mouvemens, à nos periodes de croissance et de décroissance; pourquoi la terre et les autres globes ne nourriraient ils pas aussi des parasites qui tireraient de chacune de ces spheres et leurs alimens & leurs periodes d'existence. C'est ainsi qu'une multitude d'insectes naissent sur des plantes pour en extraire leur subsistance, puis meurent lorsque

Omnibus igitur demonstratur nos ad illas aptos inter quas sumus; et quoniam suam Naturae ordinis partem necesse est ut quisque expleatur, sole clarius est ut nobis pertinet," cum vidimus speciem primum Candorumque coeli; deinde conversionis ~~et~~ celeritatem tantam quantam cogitare non possumus; tum vicissitudines dierum atque noctium commutationesque temporum quadripartitas ad maturitatem frugum & ad temperationem corporum aptas, eorumque omnium moderatorem et ducem solem; lunamque accretione et diminutione luminis, quasi fastorum notis signantem dies; tum in orbe in XII partes distributo eosdem cursus constantissime servantes, le végétal perd sa verdure & sa sève. Ainsi un mecanisme organique soutient l'autre, et la chene est un monde pour des pucerons comme la terre en est pour l'espece humain."

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disparibus inter se motibus nocturnam-
que coeli formam undique sideribus
ornatam; tum globum terrae emi=
nentem e mari, fixum in medio mun=
di universi loco; oris distantibus ha=
bitabilem & cultum:
"Coelum mitescere, arbores frondescere,
Vites laetificae pampinis pubescere,
Rami baccarum ubertati incurvescere,
Segetes largiri fruges, florere omnia,
Fontes scatere, herbis convestirier;"
tum multitudinem pecudum partim
ad vascendum, partim ad cultos
agrorum, partim ad vehendum,
partim ad corpora vestienda; hom=
inemque ipsum, quasi contemplatorem
coeli ac Deorum, ipsorumque cultorem:
atque hominis utilitati agros omnes &
maria parentia;* haec igitur et alia in=
numerabilia, cum cernimus, possumusne
dubitare, inquam, summum bonum poni
in exercitatione moderata omnium quae

* Tusc. quaest. L. I. cap. 25. –

nobis sunt facultatem: possumusne dubitare, animis quasi tenebricosis atque occaesis, ut oportet nos legibus Naturae submittere, quorum in actione ex necessitate rei, tam serio implicamur*

Dolet me nec otium, quod mihi praeoptato, nec spatium servare fusiore filo contexere dissertationem, etsi, fortasse, mihi inutile, alteris ingratum esset. Nunc ad finem festinam necesse est, quam paucis verbis dicendo de variis circa vitae originem sententiis, quae variis temporibus obtinebantur. Amplissimum dicendi campum esse constat, et quam grave subirem opus, si aliter quam levissime, unamquamque rem transire conarem.

Primum erat axioma "Graiae gentis decoris," qui mortales ausus

*Ita finis bonorum exsistit secundum naturam vivere, sic affectum, ut optime affici possit, ad naturamque accommodatissime. — De finibus. I.V. c. 9.

est oculos contra coelum tollere,* "nihil posse creari de nihilo;" nam si aliter fieri possit, omne genus sua sponte oriri quiret. "Si de nihilo fierent," omnes, ut cantat Lucretius,

Subito exorerentur
Incerto spatio, atque alienis partibus anni,
Nec porro augendis rebus,* spatio foret usus
Seminis ad coitum, e nihilo si crescere possent,
Nam fierent juvenes subito ex infantibus parvis.
&c &c

Multis aliis potentissimis atque invictis rationibus hanc propositionem demonstrat Lucretius, ad cujus

*Quem neque fama Deûm, nec fulmina nec minitanti
Murmure compressit coelum; sed eo magis acrem
Invitât animi virtutem, effringere ut arta
Naturae primus portarum claustra cupiret.
Ergo vivida vis animi pervicit, & extra
Processit longe flammantia moenia mundi;
Atque omne immensum peragravit mente animoque,
Unde refert nobis victor, quid possit oriri,
Quid nequeat. ——

De Rerum Natura L. I. v. 67 & seq.

librum de rerum natura primum, omnes refero. Deinde exponit quomodo solidissima materiae corpora, perpetuo, magnum per inane volitantia,

"res varias gignant, genitasque resolvant;" et his principiis ostendere expedit, vitae rationem ex hac atomorum concursione similiter deduci.

Anaxagorae Ομοιομερια docet "ossa e pauxillis atque minutis ossibus" &, consimili ratione," de pauxillis atque minutis visceribus viscus gigni": doctrinae a vera ratione tam longe remotae, minime refutatione opus est.

His et ejusmodi cerebri figmentis secure ac non immerito philosophorum omnium & medicorum contemplationes etiam ad Brunonis tempora ordinas. Ex eo, - habenda quibusdam de physiologia humana scriptoribus eximiis gratia*, - investigatio vitae rationis insecuta est, modo regulis veri argumenti consen-

*Bichat, Broussais, cum multis aliis

taneo; conjectatio ignara, inclinato capite, mentes hominum observationi studioso concessit, et dies fere nullus est, quin aliquid novi in solem et splendorem profertur.

Bichat illustris arbitratur vitam functionibus instrumentûm omnium corporis organicûm coactis, oriri, nulla Anima, seu vitae causa, agente. Sed ab hoc nodo facile expediamus. Nonne vides hujusmodi explicatione nihil explicatum esse, et hoc ratione dicendi, vice simplicis vitae, plurimas, cuique officio propriam, habemus? — Sunt autem clariora, vel plane perspicua nec dubitanda indicia vitae, quae principis Medicorum visu acuto, nullo modo effugere potuerunt. Enumerandis autem ingenii egregiis triumphis hujusce philosophi insignis, et aliorum tantum non sibi aequalium, plus temporis terreretur, quam opusculo praebere possim, quod, omni acto, quam imperfectum

mancat necesse est.

Non est igitur cur perjam,
et, ut, aliquando, extremum habeat dis-
sertatio mea, finem abrupte faciam.

Tractatus medicus inauguralis

de

Abortu

Præfecti, Rectorum necnon

Præclarissimorum facultatis medicæ

examini subjectus

in

Academiâ Ferreæ Mariæ

a

Johanne F. Monmonier

gradum Doctoris Medicinæ petens

1834

Professoribus collegii Marylandinensis hanc
dissertationem humillimè inscribit auctor amicus
eorum sincerrimus.

Thomæ D. Murphy M. D.

Tractatus iste utpote reverentiæ erga eum demon-
=strationis et gratæ animi pro magnis et multis benefi-
=ciis ei collatis dum studio Medicinæ sub ipsius
directione vacaret gratanter ab auctore dicatur

11

# De Abortu.

Per abortum intelligitur ejectio fœtus ex utero priusquam vasa corporis partes eam qua posset ex se ipso vivere perfectionem attigerint. Cum autem post quintum mensem et ante novem mensium completionem ejicitur fœtus, expulsio, præmaturus labor nuncupatur.

De causis abortûs.. Abortus non raro provenit ex malis consuetudinibus, educatione et vivendi modo inductis, vel ex circumstantiis fortuitis quæ vitari possunt. Inter mulieres honestiores et vitæ commodis affluentes et etiam delicatiores sæpissime occurrit, inter eas verò quæ humilem locum tenent raro videtur nisi per vim externam procuratus. Progressio gestationis citò impediri potest, nam ex causis abortum producentibus post lapsum trium mensium, quædam ita dirigi possunt ut antea ex utero fœtum conceptum expellant. His mediis ejiciendi fœtum sæpè utuntur quæ illicitum commercium habuerunt, et cum signa in hoc casu Dysmenorrhœa similima sint, non raro se præbet medicus, ad crimen perpetrandum. Variis modis procuratur abortus. Quidquid utero sufficientem contractionem efficere potest, inter causas abortûs recensetur, v. g. corporis lassitudo et perturbatio mentis, violentia externa, nimia purgatio ventris, venena, omnes morbi qui ad genus exanthematum pertinent, præsertim, variola et

scarlatina; frequenter evenit inter eas feminas quarum corpo=
=ra humoribus nimis abundant, nervi facilè excitantur vel
quæ ad iram propensiores sunt, omnia quæ matrem affi=
=ciunt, placentam, membranas vel ipsum partum, syphi=
=lis, nimius humor in utero, copiosa sanguinis effusio, im=
=perfecta et insolita uteri ejusque adjunctorum structura,
morbida conditio fœtûs, ponderum gravium levatio, abdom=
=inis percussio, casus, impressio fortis exterioribus sensibus il=
=lata, ab iis rebus quæ valdè displicent, motum injiciunt,
et cætera; existimant nonnulli uterum ita aliquan=
=do dispositum esse ut spatium non præbeat suffi=
=ciens ad formationem partûs perfectam, et inde ori=
=ri abortum. Ex causis supra memoratis frequentior est
violentia externa, nempè ictus, casus, exercitatio immod=
=erata, oppressio hypogastrii, et cætera. Post hæc nume=
=rari possunt ira prægrandis, et graves animi motus;
rarissimè provenit abortus ab imperfectâ uteri structurâ,
morboso fœtu et variola. Sæpissimus locum habet inter
eas quæ corpus vestitu immoderatè comprimunt; multùm
reprobanda ista perniciosa consuetudo, omnibus val=
=dè nociva iis præcipuè quæ corporis exercitatione raro
utuntur, luxuriosè vivunt, in mollibus lectis se recli=
=nant et ad somnum capiendum et cessandum tar=

=da sunt. Uterum comprimit, ipsius expansionem suffi=
=cientem impedit, et ad minimum sanguinem in se colligen=
=dum exponit. Si uterus morbo afficitur vel formationem
peculiarem habet, ordinariè fit ut statuto post conceptionem
tempore producatur abortus, ut aliquando evenit in quibus=
=dam feminis.

De Signis. - Signa quæ abortum indicant varia et gravia
sunt pro causâ morbi habitusque feminæ. Abortum futu=
=rum designant insolita virium diminutio, dejectioque
animi, dolor lumborum ad femora usque pertigens, in utero
pressura et languor, debilitas, palpitatio, mammarum lax=
=itas et frequens ad mingendum dispositio. Hæc signa se=
=quitur ejectio sanguinis quæ vulgò dicitur "indicium", et ve=
=vera certissimum est abortus imminentis signum. In
feminis quæ non raro fœtum prematurè expulserunt, pri=
=mum sæpè indicium est ejectio sanguinis. Fœtus mortuus
citò et cum parvâ sanguinis effusione frequentissimè
ejicitur, aliquandò vero longum temporis spatium ad hoc
requiritur et sanguinis emissio multùm timenda. Illa=
=rum effusio ista magna non necessario locum habet in
abortu, aliquandò enim expellitur fœtus, cum sanguinis
emissione levissimâ, quod quidem rarissime fit et in iis
casibus tantùm ubi non ligantur ovum et uterus; vel,

foliu ejecto, statim contrahitur uterus. Dolor fere semper sentitur in abortu, eo quod corpus et fundus uteri exerceantur ad vincendam cervicis resistentiam, antequam expellatur quod in eo est, ad quod requiruntur aliquando longum tempus et protracta dolorosa sangue uteri exercitatio. Fieri potest ut parvum vel nullum dolorem excitet abortus, quod tamen non nisi in exordiis gestationis vel cum mulier abortum sæpe expertus fuerit, locum habet, contractiones enim uteri semper fiunt. Sensationes quibus ante abortum vel, ipso procedente abortu, afficitur uterus, aliquando mammis communicantur, quæ multum dolent et aliquantulum inflantur. Rejicienda est sententia eorum qui putant abortum necessario locum habere post uteri ~~[illegible]~~ hemorrhagiam, nam experientia constat mulieres quasdam sanguinem semel et iterum copiosissime effudisse, quin aliquid mali indè experit mater aut infans. Fœtus mortuus plures menses in utero manere et per omnes dissolutionis gradus transire, potest. Fieri potest ut moriatur fœtus ante tertiam mensem et non nisi post unam vel duas menses expellitur, vel fœtus, expletis septem aut octo mensibus, moriatur et post nonam tantum mensem ejiciatur. Quando duo sunt fœtus in utero, unus in primordiis gestationis mori potest,

et non nisi post novem mensium completionem cum fœtu animato expellis, vel unus mortuus ejici potest, altero vivo retento: posterioris generis casus invenerunt quidam inter celebriores hujus urbis medicos, qui mihi dixerunt: In abortibus qui maturè occurrunt, frangi potest ovum, et quandam ipsi pertinentia una vel duabus mensibus post abortum in utero manere: casus huic similis præceptoris mei peritiam ostate præteritâ requisivit.

Diagnosis. — Modus dignoscendi informitatem istam simplicissimus est. Non habet indicia quæ alios morbos indicant nisi fortè sit Amenorrhœa pro quâ aliquandò sumi potest cùm redit fluxus; à quo tamen morbo distinguitur hisce indiciis. Rarò occurrit suppressio mensium in feminis conjugatis nisi procedat aliqua causa visibilis; v. g. expositio humido, vel morbus chronicus ut phthisis pulmonalis. His casibus exceptis, ordinariè currunt menses usque ad tempus quo natura terminum earum constituit. Cùm suppressio ex primâ causâ provenerit, femina, tempore fluxûs elapso, se gravidam putabit nisi causæ talis cessationis se subjectam fuisse meminerit. Quando redeunt menses quod sæpè post bis vel tertio factum, sine ope medici efficitur, existimat femina de abortum passuram et omnia ad

hoc impediendum adhibet. In hoc casu, quod efficit mu=
=lierem, sufficienter indicabitur, variatione effusionis
quoad quantitatem et qualitatem, doloris absentiâ, necnon
aliorum quæ vulgò graviditatem comitantur signorum,
ut, ægritudo matutina, abdominis inflatio, mammarum
amplificatio, et cætera. Post tertiam mensem, si dubia
sit conditio mulieris, et præsertim quando magno dolo=
=ri et protracto subjicitur, ad examen per vaginam re=
=curri debet; quod semper in casibus incertis faciendum
est; ex hoc enim judicari potest de naturâ morbi et
utrùm adhibenda sint media quibus ovum servari
possit. Clauso uteri ore, ovum conservare conandum
est; expanso vero, inutiliter ad hoc proceditur.

Prognosis. – Prognosis in abortu omninò pendet ex cau=
=sâ eorum quæ modo discripimus, et sanguinis effusi=
=one.

Modus Agendi. – Si abortus impendit, impediendus
est; quando jam locum habuit, sanguinis ejectio restrin=
=genda, et contractio uteri vincenda; quod fieri potest re=
=quiescendo, mentem componendo, sanguinis detractione, med=
=icaminibus soporificis restringentibusque, et res aptas ad
partes affectas applicando. Cùm uteri organa morbo affici=
=untur vel fœtus structura eorumve quæ ad eum perti=

=nent mutata fuerint, nihil proderit ars medicorum.

De requie. – Cùm aliquid mulieri acciderit, quod abortum producere queat, et ne producat timeatur, lecto se committere debet, pronaque jacens, id omne vitare quod animum turbare possit.

De Sanguinis detractione. – Media quæ jam memoravimus, non semper ad prævenendum abortum de se sufficiunt. Sæpè scalpello uti necesse est, præsertim inter eas quæ plethora abundant. Scalpelli usus arteriarum pulsu et fœmina statu determinatur. Victus moderatus et ex leguminibus proscribi debet; ad potum admitti possunt, aqua, liquor ex malo citreo factus, aqua tosta panis, &c.

De medicaminibus soporificis. – Ad uteri contractiones impediendas, sæpè adhibendum est opium, aut quodam ex eo præparata. Cessante sanguinis agitatione, opii usus multum prodest, si prudenter ministratur; motus autem fœtus vel ore uteri expanso, non solùm inutilis, sed valdè nocivus est; in utroque enim casu contractiones uteri vinci non possunt. Fœtus inanimatio ex eo dignosci potest quòd dolent mammæ et distendantur postea quæ relaxentur. Opium vel ut solidum vel ut liquidum adhiberi potest, nec non Tinctura Opii, et gutta nigra benè ministrata, et prout opus est, repetita, vel per enema cum amylo mixta,

injecta. Quando opium admitte nequit, extractum hyos=
=cyami utilissimum esse reperietur.

De Astringentibus. – Vulgò adhibetur acetas plumbi, cujus quantitas ab uno ad quinque grana pro casu extenditur et cum opio ministratur, cui modicum Ipecacuanhæ utili=
=tèr misceri potest.

Partium tractatio. – Panni frigidâ aquâ imbuti ad ima abdominis et pubis aptata, et glacies similiter applicata, multum prosunt; quando hoc fit, extrema pedum calida servanda. Si multus ejicitur sanguis, tampone uti necesse est, vel spongiâ quæ aptissima est; in vaginam intro=
ducenda est postquàm aceto et aquâ æque mixtis, imbuta fuerit, et singulis horis duodecim renovanda. Injectiones frigidæ, vel ex aluminis aut zinci sulphate in uterum immittendæ à quibusdam laudantur, sed nocere pote=
=runt hæc, vel alia quæquam in uterum injecta ante fæ=
=tûs expulsionem. Sanguinis ejectio aliquando post ovi con=
=fractionem et in eo contentorum emissionem continu=
=atur. Cùm pars ipsius in cervice uteri detinetur, infra ostincæ non satis extendens ut digitis removeatur, et contrac=
=tio fiat quâ sanguis reprimatur, ad hamum recurren=
=dum est. Instrumentum istud introducitur indicem dexteræ manûs in orâ oris tincæ ponendo, et sinistrâ per

indicem illud intra uterum usque ducendo, et ad fundum ius=
=tius organi dirigendo. Tunc lente detrahitur quo fit ut placen=
=ta curvâ acie attingatur et leniter extrahi possit. Nisi om=
=nia in utero contenta removeantur, ita irritari possit cor=
=pus ut femina morbo succumberet.

Prophilaxis. — In feminis quæ abortum sæpè patiuntur,
impossibile ferè est illum prevenire. Id omne tamen caven=
=dum est ex quo abortum evenire timetur; exercitatio corpo=
=ris vel levissima vitari debet in primis mensibus gestatio=
=nis, in lecto manebit femina, iis quæ alvum subducunt
sitetur, ut potus senna, oleum ricini, sicilitz pulvis, et
cætera; victus levi, iisque tantùm quæ facilè conco=
=quuntur. In casibus plethora, venesectio fieri debet.
Si mulier delicata sint vel debilis, ea adhibenda quæ
magis si convenient. Cùm abortus alio quovis morbo con=
=nectitur, huic attendum est, et duas vel tres menses post
tempus illius ordinarium ita se gerere medicum opor=
=tet.

An Inaugural Dissertation

on

Malaria

Submitted to the

Provost, Professors, and Trustees

of the University of Maryland

For the degree

of

Doctor of Medicine

By Thomas E. Bond

Baltimore, March

1834.

Professor Robley Dunglison

Respected Sir

If I attach any value to this imperfect Treatise, it is because it affords me an opportunity of offering you the sincere thanks of a grateful Pupil for the untiring industry with which you have wielded an unsparing broom to sweep from the path of the Medical Student the accumulated rubbish, through which so many of our predecessors have toiled, and in which so many have stuck fast.

Allow me then to inscribe this Essay to you as an acknowledgment of these invaluable services; and that you may continue your exertions to purify the Materia Medica from the Sarrago with which it is stuffed, until you shall have brought down upon you the blessings of the Students, & the Rational practitioner, and the execrations of the Old women both in and out of the Profession is the sincere prayer of

Your obliged & humble Svt.

The Author

# Malaria

No subject within the vast range of Medical inquiry has attracted more attention than that we are about to consider. None has undergone more scrutiny and none has so universally baffled every attempt at investigation. As malarious diseases have been desolating the earth from the earliest ages the attention of mankind has been constantly attracted to the cause which produces them. Yet all enquiries into the nature of this deleterious agent which sheds its deadly influence over the fairest portions of the globe, have been altogether unavailing. clouds and darkness, still rest upon it, and the continued efforts of ancient observation and modern science have only resulted in establishing what it is not.

Alas, though the constitution of the Malarious poison has hitherto eluded investigation, we are by no means uninformed with regard to its effects or the matrix from which it is produced. It was early observed that persons living in the neighborhood of marshes & rivers, were at certain seasons of the

year, subject to a peculiar train of diseases, from which the inhabitants of other situations were entirely exempt.— This was observed to be a general rule, in all countries enjoying a warm clim and a fruitful soil. Hence the influence was insisible, that there was some emanation from such soils which was the fruitful source of disease. The observation of succeeding ages has confirmed this opinion — and there can now be no more rational doubt of its truth than of our own existence. To this emanation, whatever it be, the Italians have given the name of "malaria" — a term which is not intended to convey any precise idea of the nature of the deleterious something which acts upon the human system to produce the varied phenomena of Plague in the Levant, Yellow Fever, in the West Indies, and Remittent and Intermittent in various parts of the globe, but is merely used to express the existence of some such agent, much as the letter "X" is used in Algebra to represent something yet to be discovered.

All that observation has yet established is that it is the product of moist soils acted upon

by high temperature — that it is diffused throughout the atmosphere and thus exerts its influence upon the human system. Such facts as by no means universally admitted. Theory after theory has sprung up in opposition, has had its followers and has died away, leaving scarce a trace of its ephemeral existence; and yet the laboratory of human invention is unexhausted. The passion for discovering something new has led some to oppose their "supposititious hypothetical" to the every day experience testimony of facts confirmed by every day experience, and a miserable affectation of singularity induces many to espouse doctrines which have no other claim to attention than that they differ from received opinion.

One of the veriest of these encephalic conceptions denies the existence of "Malaria" altogether — it "being nay its very name" and attributes all the phenomena which have been hitherto ascribed to its agency, to "Atmospherical Vicissitudes". To me, the generation of such an idea is altogether as unaccountable as the production of worms in the intestinal canal. It is so unlike any thing we have before seen that we cannot believe its rudiments to have been received from without — and like the Solomon of Britain when he discovered the apple in the dumpling, we are altogether at a loss to know

how it got in — It is indeed one of the "Monstrosi hominum partus" and we wonder that we are not able to apply another line "Matremque Suus conterruit infans" — Such however is not the case — it seems to share the fate of other deformed children in being loved in proportion to its ugliness. It is even rumored that the unseemly urchin has been as handsomely attired as its shapelessness would admit and offered for the commendation of your honourable body — perhaps (for who can limit the extravagance of parental expectation") with a hope that you may become nursing fathers to the hopeful child and shield it from the Spartan inquisition which might be fatal to its existence —

The whole theory, rests upon the maintenance of the proposition, that we can have no idea of the existence of any thing not recognizable by the senses, and of course we are to refuse our belief to the existence of Malaria, which no one pretends to have thus recognized. The whole reasoning is sophistical and bears absurdity upon its very front. It is scarcely better than that used by Dr Johnson to ridicule some false deductions.

"If the man, who oysters cries
Cry not when his Father dies
Tis a sign that he would rather
Have an oyster, than his Father"

It is certainly true, that we can have no idea of the physical qualities of bodies, but by the observation of the senses. Nor do we pretend to any knowledge of the physical properties or chemical constitution of "Malaria". But it is by no means illogical to infer the existence of a cause when our senses make us painfully acquainted with its effects. Now if to take advantage of the great latitude of the proposition, I might ask these gent.: if they admit the existence of "Mind" - and if so, by which of their senses they were enabled to recognize it? Do they see it, smell it, taste it, hear it, or touch it.? or throwing aside the existence of mind altogether do they attribute the phenomena manifested thro' its agency to "Vicissitudes of Temperature"? But to take a material example I would ask them if they admit the existence of "Fluorine" and if so when and how they discovered it? Its existence is merely inferred from its effects in ~~combination~~ combination.

If the existence of "Malaria" is denied upon this ground, do also must be the specific cause which produces all epidemics and many contagions. Since they are not discernible by the senses. Are we then to be told that Cholera owes its origin to Atmospheric vicissitudes? The assertion would be flatly contradicted by a thousand facts and could probably be sustained by none, while common sense would reject the hypothesis as unworthy

consideration. The same obtains with regard to Influenza, Scarlatina, Measles and many other diseases which cannot be communicated by Inoculation? Are all these diseases, children of a common parent? Was Pandora's Box a metapherical thermometer?

If it were true that Atmospheric Precipitudes are the sole, sufficient, cause of Remittents, Intermittents &c, those countries in which the thermometric range is greatest, should be most subject to such affections and vice versa — yet the contrary is the case. The Southern part of France and Italy are celebrated for equability of temperature, so much so, that they are the favourite resort of those disposed to pulmonary affections; yet these countries are dreadfully deranged by "Malaria". But we need not travel out of our own State for facts to disprove this assertion. Will any one in his senses, after having passed through the preceding winter, deny that our own city is subject to as great Precipitudes of temperature as any other part of our State or probably of the Union? Yet Balt.e is entirely free from malarious diseases, while a few miles distant, in the "Neck" they prevail to a great extent. In the county of Harford, 22 miles from the city, is the village of Abingdon, situated on a considerable eminence. Situated in the valley below and in sight of Abingdon, is the town of Bush. The former place is exempt from "Malarious" diseases while Bush is quite as subject to them as N. Orleans. Can this fact be accounted for upon

the supposition of these gent.? Certainly not. The difference in the variations of temperature in the two places is probably very small, but if there is any it must be in favour of Bush. For it is in a great measure sheltered from the winds by the surrounding heights, while Abingdon is very much exposed, so that sudden changes of temperature must necessarily be more severely felt in the latter situation ——— Much stronger instances of a similar nature have occured. Thus one bank of a small creek has been malarious, while the other remains altogether exempt from its influence; and it is not rational to suppose that vicissitudes of temp: existed to a greater degree on one side than 20 yards distant. Indeed we cannot by this hypothesis explain the fact that Bilious fevers chiefly prevail & are entirely confined to the neighbourhood of marshes & rivers, for the changes of temp: are not as great in those localities as in the highlands where Remittents & Intermittents are never known.

These are but a few of the objections which might be urged against this flimsy hypothesis (for theory it cannot be called.) But it would be a useless & sinful waste of time and paper to mention more. Nor would I be willing to inflict the perusal of them upon the Faculty, as I fear it would be more potent in exciting Splenic irritation among them than "Vicissitudes of temp:

Had those Gent, instead of charging the atmosphere with sins it never committed, had recourse to the equally intelligible tho' somewhat antiquated notion of Judicial influence, they would have elaborated a doctrine, which it would be quite as easy to support and infinitely more difficult to disprove.

Assuming then that there is a certain exhalation from moist soils which exerts a deleterious agency upon the human system, developing a train of diseases differing essentially from those originating from any other source - It remains for us to enquire - 1st How this poison is generated? 2d What is its chemical nature? and 3d By what means it exerts its influence upon the Animal economy? -

With regard to the first inquiry - there seems little doubt that "Malaria" is the product of vegetable decomposition, taking place rapidly at a high temperature, and in moist Situations. There is certainly no reason to believe that Animal decomposition is capable of producing it. Indeed experience has shown that there is very little danger to be apprehended from this source; as it is doubtful whether it has ever occasioned any epidemic or endemic disease. The gut spinners of Europe pursue their disgusting avocation, surrounded by an atmosphere laden with putridity - yet they are proverbially healthy. Those, whose business it is to prepare dead cattle for useful purposes and

who are constantly in contact with, and inhaling particles of putrescent matter are less liable to disease than others. The Anatomist bends for hours and days over the livid corpse, whilst his whole system becomes so fully impregnated with the loathsome effluvia of the dissecting room, that it is tasted in the Saliva and detected in the perspiration - yet no ill consequences follow the pursuit. But there is no truth more devoutly adhered to by the community than that putrid animal matters are a fruitful source of disease. This seems to be a fruitful principle with our city authorities whose fiery Zeal & unthriving industry in affording the rights of Sepulture to the remains of dogs & cats as a prophylactic to Cholera, was quite as remarkable as their negligence in providing accomodations for such as were to be attacked with the disease.

We believe that that ägueous vegetable decomposition at a high temperature is the sole cause of Malaria. This decomposition is certainly very different from putrefaction, for it is attended with no odour - on the contrary when putrefaction takes place Malaria is not evolved. This is evident from the instance cited by Prof. Dunglison, of the Sugar Ships in which the bilge water, mingled with the leakings, emitted an odour horribly offensive, and yet no disease was induced. The influence &c. D. draws from this fact is that M. Miasma

is not the product of vegetable decomposition solely - Yet, with great deference to the Professors opinion we are obliged to differ from him in this respect. The fact only proves the inadequacy of putrefaction to originate the poison. In the instance cited the temperature was probably below the point necessary for the elaboration of disease, as the materials were not exposed to the direct rays of the Sun. Under favourable circumstances these ships would be infected with "malaria" - and it is remarkable that Dr Brown, in an article published in the "Cyclopædia of practical Medicine" has chosen precisely the same example to show that Malaria can arise from vegetable decomposition independently of soil, that Prof. Dunglison has adduced to prove that it cannot. Viz - "The sickliness of ships from the leakage of sugar in a damp hold".

The decomposition of water alone is utterly incapable of producing "Malaria"; for it is not until the streams have been warmed by the heats of Summer and their bottoms exposed, that this effect is produced. Marshes are innocious as long as completely flooded but become malarious upon the subsidence of the water.

Much pains have been taken of late to establish the position that peculiar soils are capable of eliminating "Malaria" - But we think it altogether untenable. We find malarious diseases universally prevailing in the neighbourhood of marshes, at certain seasons of the year; and within a short distance there is

fluence does not extend altho' the soil is precisely the same. Again, if moist soils of a peculiar nature are capable of eliminating this poison, when exposed to a high temperature, malarious diseases should be chiefly prevalent in the summer months, for then from the elimination of the streams, the bottom is most exposed to the direct action of the solar rays — yet it is not until the weather becomes comparatively cool, and the streams more full, that these effects are occasioned; for the very obvious reason, that it is not until then that vegetables begin to decay. Neither could we upon this supposition account for the fact that a mill dam or sluggish pool elaborates a most virulent poison, whereas a rapidly running stream is entirely innocious. Both become deduced in Summer, and a portion of their bottoms is exposed — yet one emits no deleterious exhalation, while the other is a most prolific source of disease. We can easily account for this fact, by attributing it to the collection of vegetable matter which uniformly takes place in a sluggish pond — But we cannot see how it is to be otherwise explained. The fact itself is unquestionable, as it is attested by the daily experience of thousands who inhabit such vicinities.

After an impartial investigation of these various hypotheses, we are constrained to believe that Marsh Miasma is the product of moist Vegetable decomposition; as in this manner only we can

enabled to account for its various phenomena —

But what is this poison? We are free to confess that we do not know — Some have supposed it to be one gas, and others another — but all have uniformly failed in establishing their assertions. One fact, which we believe has been hitherto unnoticed, is sufficient to convince us that Malaria is no gas with which Chemistry has hitherto made us acquainted. It is simply this. Every deleterious gas of which we have any knowledge exerts its influence upon inferior animals, as well as man. This is a rule to which we believe there is no exception — While "Miasma" on the contrary is innocious to all but man — The feeblest animals do not appear to suffer any inconvenience from inhaling an atmosphere which is sufficient to induce the most violent disease in man, in a few hours. It would be very easy to disprove each supposition individually, but we do not deem it necessary as the foregoing remark applies equally to them all.

We are next to enquire into the manner in which this emanation is brought into contact with the human system — It is universally admitted that this is effected by means of the surrounding atmosphere because we know no other way in which it could be effected —

From the phenomena observed in the causation of Bilious diseases it appears that Malaria is heavier than atmospheric air, and is suspended in it by its great affinity for aqueous vapour — Hence miasmatic localities may be visited with entire safety

during the heats of the day - ~~[illegible]~~ but are extremely dangerous after night, when the aqueous vapour has been condensed and precipitated towards the earth.

The poison being diffused throughout the atmosphere is inhaled and brought into contact with the sentient extremities of the nerves of the lungs, and by them the effect is propagated to the Brain. This at least appears the most rational method of accounting for it. It has been supposed by some pathologists that Malaria is entangled in the saliva, and swallowed! thus producing its effect upon the Stomach, which these Gent. consider the seat of all evil. Are the nerves of the lungs less sensible than those of the stomach? Why then is it supposed that the extremely minute quantity of Atmospheric air which may possibly find its way into the stomach (and which itself contains an exceedingly small portion of malaria) ~~does~~ produces disease while a thousand times as the quantity is every moment coming into contact with a branch of the same nerves distributed to the lungs, without producing the slightest inconvenience? Is it reasonable? — Is it probable? — Is it possible? — We both never believe it until it is fairly proved, that every one who rolls tobacco like a sweet morsel under his tongue and who rarely or never permits saliva to travel down his oesophagus, is exempt from the baneful effects of Malaria ——

An Inaugural Dissertation

on

Osteoboon

Submitted for the examination

of the

Provost, Trustees and Medical Faculty

of the

University of Maryland

for the degree of

Doctor of Medicine

By

Wm L. Watson

of Pennsylvania

March 9th 1834

To

E. Geddings. M. D. Professor of Anatomy & Physiology

in

the University of Maryland,

who has proved himself to be, by his

kind attentions, the friend of a

Stranger.

this Essay is respectfully dedicated

by the Compiler

The study of Anatomy and Physiology is admirably calculated to instruct and delight one so earnestly engaged in the pursuit of useful knowledge who sees nothing revolting in the works of nature but desires to understand them as they really are.

Although the acquisition of Anatomical knowledge cannot be considered useless to any one yet there are certain professions of which it forms an integral part and of which it is in fact the basis — The arts of Sculpture and Painting rest on this foundation, for their great excellence consists in an exact imitation of natural configuration — the one by forming a solid body into an exact copy, the other (by the aid of light and shade) in giving an illusion so perfect that the most practised eye believes it sees projections and depressions, where, in truth, the whole is a plane surface.

But these are merely ornamental arts — elegant indeed, and exercising a powerful moral influence over society, but not indispensably necessary to the health and comfort of man.

There are other departments of human knowledge the perfection of which is more essential to the welfare of man resting solely on the basis of Anatomy and Physiology.
To wit — Surgery and Medicine.
The Surgeon cannot remedy those organic lesions to which the human body is continually subjected, nor can the Physician trace the connection between external symptoms and internal disease without a thorough knowledge of the structure of the human frame. The latter cannot with any tolerable degree of certainty determine the nature of a disease nor can the former advance a single step in any important operation while ignorant of Anatomy.

While then Anatomy is so essential to the successful cultivation of some of the ornamental arts and useful sciences there is a kindred branch of knowledge equally essential to the Physician and Surgeon and equally interesting to the admirer of nature — Physiology — By Anatomy we learn the intimate structure, and various relations, of the body — by Physiology we are taught the function each organ is

destined to perform in the role of vital operations, and the reciprocal influences these functions exert over each other, all combining to present to us the phenomena of animal life.

Anatomy is the science of organization — Physiology is the science of life — "Were Anatomy is therefore a map of dead matter, it is Physiology that infuses life into it."

In attempting a subject for an Essay, the chief difficulty in the selection of a particular topic arises from the great variety and importance of the subjects which may be separately treated — The field is every where rich, and begin where we may we find an ample harvest, fully repaying all the labour that may be bestowed.

Although I cannot hope to proceed in a perfect course, and even in attempting to treat of a single set of organs and functions but a very small portion of the animal economy would be brought to view the subject may not be altogether uninteresting, and a desire to understand more thoroughly the nature of these organs

and functions, and a wish to acquire a more extended view, and a more intimate knowledge of their value may be excited.
Nor is it very important where we begin, for as in a circle there is no point of preference, from which we would begin to trace its course, so there is in the human body, no part so independent of other parts no function so insulated from other functions as to determine a choice.

Beginning with any particular organ and function it would be easy to return to the starting point, without impairing the regularity of the plan.

I propose as the subject of this Essay a few remarks on the bones of the head.
Bone is by far, the most solid, compact, and durable tissue, of the human body. It is the basis on which all other parts rest — less obnoxious to injury, and less sensitive, it in some parts (as the head) forms a solid case, for containing, and protecting more delicate and vital parts.
It is unquestionably in a healthy state endowed with very little sensibility, for the

pain we experience from a broken limb is not seated in the bone itself, but in the soft parts about it. which are bruised and torn by the ragged ends of the broken bone. Yet it has sensibility, which in some diseases is painfully awakened.

Looking at a dry bone we might be inclined to believe that so solid a mass could not be organized, and yet bone is exquisitely organized, has thousands of vessels permeating through it. and the Surgeon in his operations often sees it literally bleeding from every pore — Moreover bone repairs injuries inflicted upon it, and this is one of the highest attributes of organic life — In a young subject with a fine injection, the vessels of a bone may be filled, and then it assumes the colour of the injected fluid. To make the demonstration satisfactory the earthy matter should first be dissolved by macerating the bone in an acid. A bone thus treated will be flexible, for it will have lost the earthy parts which give it its hardness, and will retain its original size, and shape, because its membranous or fibrous portions will remain unimpaired.

Chemistry has enabled us to determine with precision the constituent parts of bone, and the proportion these parts bear to each other.

According to the minute analysis of Berzelius, in 100 parts of bone, he found of

| | |
|---|---|
| Cartilage | 32. 17 |
| Bloodvessel | 1. 13 |
| Fluate of Lime | 2. |
| Phosphate of Lime | 51. 64 |
| Carbonate of Lime | 11. 30 |
| Phosphate of Magnes. | 1. 16 |
| Soda & Muriate of Soda | 1. 20 = 100 |

Mr Hatchett detected a very minute portion of Sulphate of Lime.

By these results we learn that the chief constituents of bone are Cartilage, and Phosphate and Carbonate of Lime.

The arrangement of bone varies according to the kind - but each kind has invariably its own peculiar arrangement.

Thus in long bones the middle portion is compact, with a cavity in the centre, occupied in part by a reticulated structure, composed of thin plates & tubes. The extremities are cellular or spongy.

In flat bones the external surfaces are

composed of from plates, but the internal substance is cellular, while in some bones the structure is lamellated.

All bones with the exception of the bodies of the teeth are invested with a dense membrane, of a dull white colour called Periosteum. This membrane is, like bone, insensible in health, but subject to disease, and when diseased becomes painful. Its chief use appears to be to facilitate the distribution of blood vessels on the external surfaces of the bones. It receives the general appellation of Periosteum, but where it covers the bones of the head it is called Pericranium. Where it is extended over cartilage it receives the name of Perichondrium.

A great variety of conjectures were formerly entertained respecting the manner in which bone is formed. It was by some, supposed that bone was a mere coagulum of blood gradually hardened — others, supposed that it was at first cartilage which in the process of growth was converted into bone, and that bone was merely hardened cartilage. The best physiologists of our day agree in holding the opinion, that, although cartilage is the basis of bone yet that the formation of bone is a genuine secretory process, performed by the extremities of arteries, and that while the cartilage determines the size and shape of the bone, it is duly removed by the absorbents, and that as this destruction of cartilage by absorption is going on, the arteries are busily engaged in the secretion, and deposition, of bony matter to supply its place.

Nature designed that the formation of bone by arteries should be limited, but we find that any arteries may secrete bone and we see them doing so not only where bone should, but where it should not be formed, as in joints - tendons - the brain - the heart and its valves - and the coats of the arteries themselves - The last is a very common occurrence in old age. In the embryo all the bones have the appearance of a transparent jelly - and the long bones are so flexible that they may be bent into a ring. The first evidence of commencing ossification is the appearance of an artery, which seems like a red line running through the cartilage. This artery was formerly invisible, because it transmitted only the colourless part of the blood, but now, it has enlarged, and carries the coarser red blood, and the work of absorption of cartilage, and secretion of bone now commences. In the bones of the head, and in all flat bones, the process of ossification begins at several points, from which the osseous fibres issue in rays, and these rays may be seen for some time after the completion of the process. In the long bones, ossification begins by central rings, from which, the bony matter extends to the ends of the bones. Spheri-formed bones begin from a single nucleus, and irregularly shaped bones from several nuclei. The bones of the ear are always completely formed at birth. We see in all bones foramina for the transmission of blood-vessels. In the long bones the principal foramen is generally near the middle of the bone.

By these foramina the vessels destined for the nourishment of the bone obtain ingress and egress. All the bones together form the skeleton, and this is said to be natural, when the bones constituting it are attached to one another by their ligaments, the soft parts being removed, artificial when connected by any foreign substance. The skeleton is divided into the head, trunk, superior, and inferior extremities. The head includes the Cranium or skull, and face. The Cranium consists of eight distinct bones, which when arranged in their natural order, form a somewhat spheroidal cavity which contains the brain. These bones are divided into those proper to the Cranium, viz — the Os Frontis, two Ossa Parietalia, two Ossa Temporum, and Os Occipitis, and those common to the Cranium and face, the Os Sphenoides and Os Ethmoides. The proper bones of the cranium are flat, composed of two tables or plates, with cellular structure between them, called Mediullium or Diploe. Some of the terms used in the description of particular bones require explanation before proceeding further. Process, signifies a protuberance or eminence growing out of a bone. If a process has a spherical form it is called a head. If this head be flattened laterally it is called a condyle. A rough protuberance gets the name tuberosity, while a sharp ridge on a bone, is called its spine. The anatomy of the head is generally considered intricate, but much of its seeming intricacy may be obviated by a regular method of investigation. We should first examine the exterior surface

of the whole head - we see it prominent anteriorly and posteriorly - flattened laterally, its greatest length being in a line from before backward - and at its base presenting numerous openings, for the passage of the extension of the brain, called spinal marrow, vessels, and nerves. We observe the bones joined together by a particular arrangement of the edges which are serrated - this junction of bone is called suture. Across the middle of the head, or rather in front of the middle line in a transverse direction is the junction of the forehead to the lateral and middle bones, by what is called the Coronal Suture. Traversing the head in a longitudinal direction, is the Sagittal Suture, which usually commencing from the middle of the Coronal Suture ends posteriorly at the termination of the superior margins of the Parietal bones. Sometimes this suture is protracted to the root of the nose dividing the Frontal bone into two equal parts. At the lower and back part of the head is the Lambdoidal Suture connecting the Occiput to the middle bones posteriorly, and laterally to the posterior termination of the lateral bones of the head. At each side is the Squamous Suture, connecting the lower and lateral bones to the anterior, lateral, and posterior bones. These are the principal sutures of the head. The Os Frontis forms the front and upper portions of the head, and receives its name from its situation. It has been compared to a clam shell in shape - is externally smooth, with few projections & those rounded.

On each side of its lower portion it has a projection called Superciliary ridge, on which, the eye brow rests. Outside of this ridge, is a process denominated the External Angular On the inner side is another, called the Internal Angular. Just above the internal termination of the superciliary ridge is a projection, occasioned by the reception of the tables of the bone forming a cavity called the frontal sinus. This sinus is ordinarily of a determined size. It has been found however extending as far back as the Coronal suture, while on the other hand, in some heads, it is altogether wanting. These sinuses are in the living body lined by a membrane, supposed to be a continuation of the Schneiderian membrane which lines the cavities of the nose. They communicate with each other and also with the nose. The older physiologists maintained that the frontal sinuses were necessary to and bore a part in the performance of the function of smelling, but we know that they cannot be essential to this function, for they do not exist in young children, who nevertheless have sufficiently acute perception of odours. Another objection to this opinion is, that in a healthy state there cannot be a stream of air rapping through them, and this is essential to the sense of smell. But an experiment of Desault makes strongly against the old opinion of the use of these cavities. Desault attended a patient, in whom the frontal sinuses were laid open by the destruction of the anterior table of the bone. The man could breathe for a short time

through the sinuses when the mouth and nose were closed. Depaul closed the mouth, and nostrils, and then presented to the sinuses, a variety of odorous substances, but the man had not the slightest perception of them. It has been urged as a proof, that the sense of smell resides in these sinuses, that when we apply to the nose a pungent and volatile body, a pain is felt in the forehead, but by the same experiment and reasoning we should make the eyes a part of the organ of smell for they are pained and their secretion suddenly, and greatly increased, by the application of volatiles to the nose. The present opinion respecting the use of this arrangement is, that it modifies the voice. We know that when the sinuses are affected by catarrh, the voice is changed. When they are closed the voice is almost suppressed, and when by disease the curtain of the palate is destroyed, so that the voice does not pass upward to the nose, it is almost lost. These cavities do not raise the tone, or note, in which we speak, but they add to the voice clearness and strength. Insects have sometimes nestled in these cavities, and occasioned great distress. Fractures of the bone over the sinus require great care, on the part of the Surgeon. He should be very certain, before attempting any operation here that both tables of the bone are beaten in, for it can be readily perceived, how the outer table may be driven in, and yet the inner table maintain its natural

position, and the brain sustain no injury. On the inner surface of the Os Frontis, and of the middle of the bone, is a ridge or spine, running backward about half the length of the bone — This spine is sharp, & prominent, at its commencement but at its termination ends in a groove. It gives attachment to the falciform process of the dura mater, that vertical partition which separates the hemispheres of the brain. At the very beginning of the spine, there is a depression, into which the falx dips to get a firm hold. The groove, at the termination of the spine, lodges the great longitudinal sinus or vein, which runs along the division of the dura mater. For the dura mater is a double membrane, i.e composed of two plates or walls. Two processes may be here observed which vary from the general direction of the bone, and run backward nearly at right angles. These are the Orbitary processes, exteriorally, they cover the eye; and internally, give support to the anterior portion of the brain. These processes are thin, and semitransparent. They are thin because of the external pressure of the eye, and the internal pressure of the brain. The surface in contact with the eye, is very smooth, while that in contact with the brain, is strongly marked by the convolutions of that organ. Upon the orbitary plate and below the superciliary ridge there are two depressions, in the socket of each eye, one very small, and deep, in the inner corner of the eye just within the internal angular process, receives the semicartilaginous pulley of the superior oblique muscle of the eye, the other, large enough to receive the end of the little finger, is the bed of the Lachrymal gland, the gland that secretes the tears and keeps the eye moist. There are also two protuberant points on this bone, above the superciliary ridge called

the frontal eminences. The Ossa Parietalia, or wall bones are two large bones convex externally, concave internally, (one on each side) which form the sides and upper part of the Cranium. They form the greater share of the skull - are more exposed - more frequently broken and more easily operated upon by the Surgeon than the other bones of the head. They are more uniform in their thickness and more regular in their interlabular structure than the other bones of the Cranium. Nevertheless, irregular pits and depressions are occasionally observed in them. Each bone has four angles - the frontal occipital - mastoidean - and temporal - and assists in the formation of the coronal - sagittal - lambdoidal and squamous sutures. At the lower part is a tolerably well defined semicircle, formed by its junction with the temporal bone, and the edge of each is bevelled, so that the edge of the temporal overlaps the parietal by a thin scale, hence the temporal is as often called the squamous suture. Above this, there is a white, semicircular line, marking the origin of the temporal muscle, here the bone is particularly white and hard, the converging rays are made by the fibres of the muscle, and show how it is gathered together to pass under the zygoma or arch of the temple. The inner surface of the junction of these bones, is marked with a groove, which holds the longitudinal sinus - Half of the groove belongs to each bone. At the temporal angle the great artery of the dura mater touches the bone, traverses it from there to the sagittal suture, making in it, depressions of an arborescent kind. Its deepest depression is made where the artery

first comes in contact with the bone, higher up it is less deeply imbedded. Sometimes this artery is entirely buried in the bone so that if a Surgeon is obliged to trephine the bone, he cannot avoid cutting the artery, accordingly it is a rule in surgery to shun, if possible, the application of the trephine over the course of this artery. At the mastoidean angle is a pretty deep groove, made by the lateral sinus. The junction of the frontal and parietal bones is imperfect in the child, the deficiency in the bones is covered by membrane. which by some anatomists is called folium, from its supposed resemblance in shape to a leaf. While the vacancy was called, fons or fountain, by the ancients, they believing that it was a drain for the moisture of the brain. Others again, added the term pulsatilis and called it fons pulsatilis or beating fountain, because we feel the pulsation of the brain there. Sometimes, during the process of ossification, an irregularity occurs in the deposition of bone. These irregularities occur chiefly in the course of the lambdoidal suture, although occasionally we find them in different parts of the head. They form small and separate bones of uncertain size, and shape, always in the course of a suture, and therefore an object of interest to the Surgeon. They are called Wormiana, from Wormius, the anatomist, who first described them. The os occipitis, or posterior bone, is the thickest of the cranial bones. Its thickness is however very irregular for in some parts the bone is almost transparent, while in other parts it is very thick. It gives origin and insertion to many of the muscles which move the head and neck, supports

the posterior portion of the cerebrum, contains the cerebellum, and is strongly marked by the great sinuses of the brain. The muscles of the neck form strong irregular marks on the external surface. On the upper portion is the superior transverse ridge or spine, below this, we have the inferior transverse ridge, with an intervening hollow. Traversing this hollow and both ridges is a spine running from above downwards in the middle line of the bone. This spine, forms the division between the muscles of opposite sides. The point where the superior transverse crosses the vertical spine is called the posterior tuberosity. Opposite to these ridges, we find on the internal surface, crucial ridges, larger, more regular, and equal, making, but one transverse, and one perpendicular line. The tentorium, a strong membranous process of the dura mater, which divides the upper and larger portion of the brain, called cerebrum, from the lower and smaller portion, called cerebellum, is strongly attached to the transverse line of the crucial ridge. The upper portion of the vertical line, receives the continuation of the longitudinal sinus, coming down from the junction of the parietal bones. The sinus forks in the back part of the head - the forkings are called the right and left lateral sinuses, these go down through the basis of the skull and passing down the neck are called the internal jugular veins. This bone presents several processes. One portion connecting the occipital to the sphenoidal bone, which both on account of its shape, and the position, it occupies, is named the Cuneiform or wedge-like process. On the inner surface of this process

is a hollow, called, Fossa Basilaris. in this hollow, lies the Basilar artery. The space between this process, and the petrous portion of the temporal bone, is occupied by the inferior petrous sinus. On the fore part of the great opening are two button like projections - the condyles of the Occiput - these articulate with the first vertebra of the neck, and form the hinges which the head moves. These condyles are flattened, of an oval form, their fore part inclines inward, so that in front they approach each other. By their junction with the first bone of the neck we are enabled to move the head directly forward and backward, the forming or rotatory movements of the head, are performed chiefly by the bones of the neck. The condyles stand on the margin of the Foramen Magnum or great hole of the head. through which, passes from above the Spinal Marrow, or continuation of the brain and the vertebral vein. The vertebral arteries also pass through it from below. Just in front of the Foramen Magnum on each side, is the anterior condyloid foramen, for the transmission of the hypoglossal or ninth pair of nerves going to the tongue. Behind the condyles, we find the posterior condyloid foramen, one on each side, for the passage of a small vein which carries its blood to the lateral sinus. This foramen is sometimes divided by a bony partition, and sometimes it is wanting, the vein passing up through the Foramen Magnum. Temporal Bone. In the young subject this bone is in two pieces. The thin flat plate, called the squamous portion, from its

suppose resemblance it a scale, and the inner irregular portion, called petrous, from its extreme hardness. The squamous part overlaps the lower edge of the parietal bone, and is externally smooth and polished. The petrous portion, is hard, very irregular, juts inward, towards the base of the skull, and contains the organ of hearing. There is a third portion called Mastoid, thick, hard, and cellular. Its interior contains those caverns, which are supposed to be useful in reverberating sounds. The squamous portion is serrated, to form the squamous suture, the edge bevelled off, to adapt it to the parietal bone. The petrous part is triangular, and exceedingly compact in its texture. Where it projects into the base of the skull, it has several open foints. The temporal bone closes the foramen at its inferior and lateral part posteriorly, it is joined to the occipital, and anteriorly, to the sphenoid bone. This bone has three principal processes. The Zygomatic or yoke-like process rises broad and flat before the ear, grows smaller, as it passes forward to reach the cheek bone, and forms with it the Zygoma or yoke of the temple, under which the temporal muscle plays. It is joined to the cheek bone by a very fine suture. The Styloid process, is named from its resemblance to the Style, with which the ancients took a wax. It is cartilaginous long after birth, even in the adult, it is often incompletely ossified, and has a cartilaginous extremity. It gives origin to a ligament, which goes downward to support the Os Hyoides, and from it, arise many curious muscles of the

throat and jaws. The Mastoid, or Mammillary process is a conical projection; it is felt very easily in the recent subject by applying the finger behind the ear, is hollow, cellular, and enlarges considerably the middle cavity of the ear. Under its root there is a remarkable groove, in which rests the first belly of the digastric muscle. At the point of the process the Sterno Mastoid & Trachelo Mastoid muscles are inserted. The Auditory process is merely the outer margin of the external opening of the ear. In the child it is a distinct ring laid upon the rest of the bone — in adults it is really a process. This bony ring occupies the space between the root of the Mastoid and the root of the Zygomatic process. The Vaginal process is the rising of bone, in a sheath, like form round the anterior part of the Stylord process. The lower jaw is articulated with the Temporal bone by a fossa, named glenoid. There is a fissure intersecting this cavity, which receives the name of Fissura Glaseri. In this fissure is a foramen containing the processus gracilis of the malleus with its muscle also the chorda tympani. The Meatus Externus, an important foramen, is covered by the membrane of the tympanum, and communicates the vibratory motion of the air, for hearing, and exciting the internal organs. The Meatus Internus is that opening by which the nerves of hearing have access to the ear. It is a large foramen, in the posterior part of the petrous portion. Within this large foramen are two smaller ones. For the conveyance of the portio mollis the proper nerve of hearing, the

other. Through which the portio dura traverses the petrous bone, and is at last transmitted by the Stylo-Mastoid foramen. Although the two nerves enter the internal meatus together, they have very different destinations, and functions, the soft portion being spread over the cavities of the Internal Ear and the hard portion supplying the muscles of the face. The Internal Carotid, the main artery of the brain, enters the skull through the foramen Caroticum, near the point of the petrous bone – this artery goes directly upward, then obliquely forward, through the bone and then again upward to the inside of the head, describing in its course, the curvature of the letter S. It is supposed that this arrangement answers the purpose of lessening the force with which, otherwise, this great artery by its pulsations would impinge on the brain, and obviates the hazard to which so delicate an organ would be subjected by the strong beating of a large artery against it. In some of the lower animals there is a still more particular provision against this danger – In them the artery divides into many branches just before it enters the Cranium, and in this way the force of pulsation is greatly diminished. The great lateral opening gives passage to the continuation of the lateral sinus, which forms the internal jugular vein. The opening (called foramen lacerum posterius) is formed in part by the occipital, and in part by the temporal bone. Besides the jugular vein it transmits the eighth pair of nerves

# An Inaugural Dissertation

## on Apoplexy

submitted to the examination of the

Provost, Trustees and the

Medical faculty of the

University of Maryland.

For the Degree of Doctor of Medicine

by W. G. Mills

of South Carolina.

March 1834

To

E. Geddings M.D.

Professor of Anatomy, and Physiology,
in the University of Maryland.

These pages are respectfully inscribed
as a testimony of the high regard, and
esteem, which I have for his talents:
and for the public and private worth,
which has elevated him to the highest
honours of his profession, and for his
kind attention to me while his pupil.

The Author

# Apoplexy



"The term apoplexy was employed by the Greeks and is still used to denote a disease, in which the patient falls to the ground deprived of sense and voluntary motion.

"This disease appears to have engaged the attention of physicians at all times, we find short definitions of it in all the older writers, Hippocrates in his work (de Morbis. liber ii) thus characterizes a disease, without making use of the word apoplexy. A pain in the head suddenly seizes a person in health, he immediately becomes speechless, he snores with his mouth open; and if any one calls to him, or moves him he groans, but understands nothing. In another part of his work, although the term apoplexy is introduced the disease is not so clearly described. He says when the humours that flow from the head are obstructed or become acrid, the brain is affected with phlegm, the whole body becomes convulsed, the power of speech is lost, and suppuration succeeds. "This disease he calls apoplexy.

Apoplectic persons says Galen, loose all motion

except that of respiration. The older writers give the same account of this disease. The Greek writers seem to have considered apoplexy and palsy as diseases of the same nature. Aretus says, apoplexia, paraplegia paresis, and paralysis, are all of the same kind and consist of a defect of sensation, and motion or of both.

In the writings of modern nosologists we find a great variety of definitions to this disease. Sauvages denominates it, a most profound sleep, with stertorous respiration, and Lemnaus describes it in nearly the same terms.

According to Dr Cullen, apoplexy is a disease in which the whole of the ~~external~~ and internal senses, and the whole of the voluntary motions are lost, while respiration and the action of the heart continues to be performed. By its being an affection of the whole of the voluntary motion, we distinguish it from palsy and by the continuance of the action of the heart, we distinguish it from syncope, as well as by the continuance of respiration.

Dr Young refers apoplexy and hysteriphales to a common

genus - which he denominates, carus, and defines it thus, a sus-
=pension of the powers of sense, and motion, more or less per-
=fect, with an appearance of sleep, the motion of the heart
remaining uninterrupted - and he distinguishes apoplexy from
the other species of this genus by its character; supervening sud-
=denly, with stertorous breathing - Dr Good say apoplexy is
mental and corporial torpitude, with stertorous sleep -
Although stertorous breathing is generally included, as a
symptom of this disease, some nosologists contend
that this affection may exist without this symptom
Cullen says this symptom is not always present even
in the most complete form of the disease -
Cullen's apoplexia is a genus including asphyxia and cat-
=alepsy, he has been compelled to omit this last symp-
=tom, or he must of excluded the two last diseases -
This disease may be thus defined; A disease in which the
animal functions are suspended, while the vital and na-
=tural functions continue, respiration being usually laborious
and attended with stertor - Apoplexy rarely commences without pream-
=nitory symptoms. but sometimes there are none -

Symptoms before the attack comes on - They are sometimes so slight as not to be noticed - they are vertigo, headache, a sense of fullness, or feeling as though the head were larger than usual - a sense of pressure, drowsiness, frequent attacks of sneezing involuntary contraction of the muscles, irritability of the stomach, ringing in the ears, impaired or double vision, slight deafness, impaired powers of articulation inspirations deeper than natural, redness of the face and eyes bleeding from the nose, loss of memory and diminished sensibility of the mind, body, or both - Many of the precursory signs of apoplexy are mentioned by the ancients - Hippocrates says persons who are affected by headache and ringing in the ears, without fever, with vertigo, hesitation in speech, torpor in the hands, are likely to become apoplectic or epileptic, and again, an uncommon torpor and stupidity, indicate an attack of apoplexy - Aretus says this disease generally comes on suddenly - but sometimes gradually - beginning with heaviness difficulty of motion, torpor, a sense of cold or great heat, disturbed sleep as well as disturbed imaginations

Celsus Aretæus and others give a similar account of the symptoms of this disease — Avicenna observes, that Apoplexy is often preceded by a burning pain in the stomach, inflammation, vertigo, scotomia, obscurity of sight, tremors throughout the body, + gnashing of the teeth in sleep, a sense of general weight and heaviness, and often dark coloured and thick urine, "The paroxysm is immediately preceded by vertigo sometimes by a most violent, sudden, and excruciating pain, in the head. In the fit the patient falls to the ground and lies as in a deep sleep from which it is almost (and sometimes is) impossible to rouse him

In the strong apoplexy, the respiration of the patient is generally much impaired, but though laborious it is often in the beginning of the paroxysm slow and regular, when it becomes frequent weak and irregular, it is generally an unfavourable symptom. Dr Cheyne says the respiration is at first slow and hearing then irregular, and sometimes convulsive,

He adds immediately before death the respiration is irregular, and is not performed oftener, than (perhaps) three or four times in a minute. "The laborious breathing is very frequently accompanied

by stertor- and some physicians contend that the disease 6
cannot exist without this last symptom- others that it may
but that it is one of the usual symptoms. Dr Kirkland
says that the snoring and sonorous respiration are pathogmon=
=ic signs of this disease, and that profound sleep, insensibility
&c= without them do not characterize the disease- Boerhaave
measures the strength of the disease by the degree of stertor=
Portal agrees with him on this subject, observing that the
respiration is greatly impeded, and the motions of the chest
very apparent= In strong apoplexy there is a frothy saliva
frequently ejected from the mouth, which is sometimes
blown to a considerable distance from the patient, and with
great force- The pulse in this disease at the commun=
=cement of the attack, is generally described as being full,
slow, regular, or hard- beating sometimes not over thirty
in a minute, and at others, it is weak, small, and quick
beating upwards of one hundred and fifty in a min=
=ute- According to Dr Cheyne the irritability of the heart
survives that of respiration, sitting (he says) with my finger
on the pulse of a person who died of apoplexy, I distinctly

felt the pulse beat after the last expiration. Dr Cook says as- 7
far as he has had an opportunity of observing the pulse, it is at first
regular, full, strong, and slow, beating from fifty five to sixty
in a minute, but as the disease advances, it becomes weaker
more frequent, and in the end irregular or intermitting.
The face and whole body are sometimes bedewed with a cold &
clammy sweat, but more frequently the temperature of the body
is above the natural standard, and is accompanied by copi-
ous perspiration. Fever has been mentioned as a symp-
tom of apoplexy, by some of the older writers, but is not genera-
ly marked among them, at the present day. The blood is gen-
erally inflamatory, but this goes to show the nature of the disease
The eyes in this disease are described as being prominent, blood-
shot, sometimes half open, but more frequently half closed, the
cornea dull and glaisy, and the pupils dilated. In the genera-
lity of cases the pupils are in this state, but in some it is
permanently contracted. In some cases says Dr Cook I have obser-
ved the pupil contracted to a point, and a physician of my
acquaintance has observed the same thing in a number of instances,
Yet although says the same author all writers on the subject

mention the dilated pupil, I do not find one (Aretæus among the ancients, and Dr Cheyne among the moderns excepted) who has mentioned the contracted pupils in these cases. The teeth are in general firmly locked together, and the deglutition is so much impaired, that fluids forced into the mouth are returned by the nostrils — When apoplexy terminates fatally as the disease proceeds, the suspension of sense, and motion, becomes more complete, the respiration and pulse more weak, cold clammy sweats affect the whole body, the features shrink and convulsions supervene which terminate in death —

The length of the fit is very various, sometimes it terminates fatally in one hour, or it may be three, sometimes the patient is as it were struck dead immediately, when this is the case it is doubted wether they can be considered cases of apoplexy Forestus thinks they cannot be considered as such — Sudden deaths are generally ascribed to apoplexy, but Dr Cook and several others think they result from some other cause, than that which would give rise to this disease, such as the rupture of some large blood vessel, or an affection of the heart — Wether cases of death from the inhalation of carbonic acid gas &c

he thinks properly be considered cases of apoplexy. Genuine apoplexy seldom destroys in less than one or two hours. The paroxysm generally lasts from eight to twelve, twenty four or forty eight hours, and sometimes to a still longer period. When apoplexy does not terminate fatally it usually terminates in paralysis, sometimes the patient gradually recovers (when no organic lesion is produced) his sense and motion, sometimes this takes place in a few hours. sometimes not for some months, at other times the patient neither recovers the use of his limbs or speech. Persons often survive the attack even when effusion has taken place, and recover so far as to be able to transact their ordinary business.

Causes. Apoplexy is said to be hereditary by some authors. It may come on at any period of life, but from the age of fifty upwards, it is most frequent in its attacks. Rochoux states that out of sixty three cases of this disease the majority of them were after the age of sixty. Persons most disposed to this disease, are such as have short necks, and are of full habit, such as lead an indolent life and are sedentary in their habits, live high and keep late

hours, those that sleep on soft beds, and any other cause that tends to
to disturb the equilibrium, increases the tendency to this dis-
-ease. Diseases of the bloodvessels of the brain such as lead
to rupture of their coats, and consequently to effusion of
blood. Viz ossification of the arteries, aneurisms, (Dr Mackintosh
relates a case in his work on practice of Medicine page 90 vol II of
a patient only twenty two years of age who had one large and
two small aneurisms in the sylvian artery) obstruction of the
sinuses, and it is well known that hypertrophy of the heart
has also produced this disease

## Post Mortem Appearances.

When the scalp is divided a large quantity of blood flows from
the incision. This is supposed to arise from the accumulation
of blood in the right side of the heart, and also a suspension
of respiration or from its being very much impeded for some
-time before death. The dura mater is sometimes adherent
to the skull, tunica arachnoid thickened and loses its transpar
-ency & pia mater generally very vascular, but sometimes
very pale, at other times there is an effusion of serum between the
tunica arachnoidea and pia mater, sometimes there is blood under

may be clear or mixed with coagulable lymph, at other times the brain may be broken down and mixed with the fluids that may be there. Sometimes we find the substance of the brain hard and firm, and when cut into numerous points or red patches are observed, showing that the vessels are enlarged. The ventricles are often enlarged as well as the communication between them, sometimes we find an effusion of serum.

Most generally we find blood extravasated between the cranium and the membranes, in the substance of the brain, as well as in the ventricles, in fact we may find blood effused in any of the ventricles or in any portion of the substance of the brain. When blood is effused it is contained in a cavity the walls of which are ragged, and the substance of the brain so mixed with it, that one cannot be washed away without the other being mixed with it and lost. The rupture may take place from any of the large or minute arteries of the brain. Blood is not always found in examinations of the brain, in those

who die of apoplexy, but we always find the remains of increased action, and congestion, in the arterial and venous systems of this organ. "The plexus choroides is not uniform in its appearance, sometimes it is red and florid, showing high inflamation, at other times pale and colourless. "The parts most frequently affected are the corpora striata and the thalmi nervorum opticorum (Macintosh vol II page 97) Dr Cheyne says he has generally found the blood effused opposite that in which paralysis exists, he, also says he has found blood effused in the cerebrum as well as in the cerebellum, and not as has been supposed in the cerebrum alone, Upon desection, cavities of large size have been found in the substance of the brains of those who have survived the attack, for sometime, containing flakes of coagulable lymph of a bloody coloured fluid or of serum, "The livers of apoplectics are generally unsound, and have the appearance of those who are addicted to the use of spirituous liquors, We sometimes find congestion and thickening of the organ with adhesions to the peritoneal coat, which lines the

diaphragm, It is not by the sculpel alone that anatomists 13
to can demonstrate the state of the vessels which pore the
blood into the substance of the brain during apoplexy, but
in many cases after he has exposed the seat of the extrav-
asation, he may, by means of a small syringe or a camel
hair pencil, wash away the broken portion of the brain &
carefully removing all the clots of blood, he will at length
observe all along the walls of the cavity small vessels not
larger than a hair, closed by small clots of blood.
Some suppose apoplexy to arise from venous turgescence
and rupture, occasioned by the impulse of the blood
repelled, in consequence of obstruction existing in the
right side of the heart, Dr Cheyne says this is disproved
by the description which he has given of the minute
arteries, many of which he traced to their origin from the
main trunk. It is probible that the sinuses are expressly
to prevent any thing of this kind from taking place
When however (says the same author) any resistance to the
circulation takes place, the arteries which lead to the
obstructed part act with violence

Any thing that prevents the free return of blood, may induce this peculiar action of the arteries, which may end in a fit. Apoplexy is not as sudden a disease as is generally supposed the attack is rather connected with changes which have been going on a longer or shorter period according to circumstances. This opinion is supported by the duration of the disordered functions, which denote the apoplectic diathesis and by the various appearances observed on dissection, the substance of the brain is changed in consistence, the membranes have lost their transparency, and we seldom make a dissection after apoplexy that we do not observe some effusion. As regards serous apoplexy I conceive it to be nothing more than hydrocephalus acutus.

Treatment. The means to be employed in the cure of apoplexy, may be considered under three heads first blood letting, second emetics and purgatives and third of external applications

First of blood letting. Many of the physicians in England object to blood letting in this disease, but in France it is almost entirely discarded by the best physicians, although

some of the ablest practitioners have tried to introduce it into notice in that country, they have not been able to succeed Blood letting is the main stay of our hopes in apoplexy, and without it there would not be one patient in one hundred who would recover in this disease

Blood letting is objected to, first by those who consider it to be a disease of indirect debility, secondly by those who think that paralysis is not so much the consequence of any diseased condition, as it is the effect of the depletion used to cure the fit, thirdly, those who consider the attack to be symptomatic of serous than of sanguineous effusion, According to Dr Cheyne the majority of cases which he examined, there was effusion of blood. We are extremely solicitous (says the same author) to guard the patient from this part of the disease, to which there is so great a tendency, and which must render his situation so much the more desperate. Extravasation of blood arises from the increased irritibility and action of the vessels and how is it possible to moderate this, but by diminishing the quantity of blood in them. I admit (says Dr Cheyne)

that the constitution of those who are subject to this 16
disease, are generally in a state of exausted excitability
and consequently blood letting is a remidy which we
should anxiously avoid; but when the attack has actually
commenced we must bleed, or, the patient will die, there-
fore it is or only alternative, we must empty the vessels
or loose the patient to his fate, If a person can be con-
=vinced of the necessity of bleeding it is by post mortem
appearances, there they will see the utility of bleeding
in this disease. As regards the second objection, it is very easy
to prove from the practice of the best physicians of the
present day that blood letting never brought on palsy
for they prescribe it in the disease (palsy) There is a
case related by Dr Cheyne (page 63) which is in point
A Gentlewoman of sixty after a shock of apoplexy, had
whenever she became plethoric, or drank too much
brandy, an attack of convulsions with consequent
stupor, Mr C Bell of Edinburgh who attended her during
these attacks to which she was subject for more than two
years. He generally drew about two pounds of blood from

her arm, as soon as possible, after every seizure, yet she 17
was at last destroyed by umbilical hernia, without ever
having had palsy in any shape or form. On the contra-
-ry it appears by a multitude of cases and the experien-
-ce of the best practitioners that palsy generally follows
those cases where blood letting has not been used.
The usual order of attack is sometimes changed and
palsy precedes instead of following apoplexy, this last
is important consideration, if we consider the proximate
cause of apoplexy and palsy as the same in kind
for if we do, we may avert the attack of apoplexy by large
and repeated bleeding. There is one other observation which
is of importance, that is, the attack of palsy when it
does not lead to apoplexy is attended by the symptoms
which denote an inflamatory disease. With the exception
-tion of Dr Brown, Dr Lothingill among the English phy-
-sicians, is the most zealous adversary to the use of the
lancet; there is not one solid argument in support
of his opposition, Dr Lothingill disapproves of the practice
of bleeding a person of a plethoric and luxurious habit

with a full tense pulse, and general appearance of suffocation. What physician of common sense could follow such advice as Dr Hothergill gives. When we examine the brain of a plethoric man, who has died of apoplexy, do we not find marks of inflamation and congestion, some of the arteries have yielded to their own inordinate action, and the brain is lacerated and torn up by the blood which has flowed from its proper direction into its substance

Dr Hothergill conceives that all the struggles we observe in a fit of apoplexy arise from the exertion of the vires vitæ to restore health; but the crisis commenced under these happy auspices cannot be continued, unless the animal strength is entire, he conceives we will sink the strength by blood letting, and either destroy our patient at once, or leave him to regret our officiousness during the remainder of his life. The Doctor must have found no small difficulty in explaining how a thin and delicate person would be able to survive four of five

large bleedings, and have no symptoms of paralysis to 12.
follow the attack, Dr Fothergill conceives that the stomach
and brain are two distinct portions of the body forgetting
at the same time the sympathy there is between them
and therefore he conceives that when apoplexy attacks
a person after a hearty meal that the disease is produ-
ced by the stomach pressing on the abdominal aorta
and thus obstructing the free expansion of the lungs
and by this means he supposes the arterial system
of the head is crowded and the disease produced -
2nd From a conviction that Bloodletting is injurious in one
form of the disease the Doctor is led to doubt its efficacy
in any - 3rdly - The physicians who object to venesections
in apoplexy but the attack should be severe, must teach
us how to distinguish the severe from the sanguineous -
Secondly - to prove that Blood letting is injurious to a pa-
tient who is labouring under severe apoplexy, neither of
which ever have been done - Cases are on record in
which the vessels of the brain were found gorged, or in
which blood has been found extravasated - that is -

in pale relaxed men and women, who have led a life 25
of temperance or even abstemiousness - therefore the exis-
-tance of serous apoplexy, is not determined by age, appear-
-ance, sex, or even the habits of the patient, yet these
were the diagnostic marks hitherto relied on
Morgagni's or Portal have not been able to give any sym-
-ptoms by which we may distinguish the two disea-
-ses - For practice we should follow Portal. he says
bleed, in both forms of the disease, - In all Morgagni's
dessections under the head of serous apoplexy, there appeared
venous turgescence and an effusion of serum, Dr Cheyne
(page 59) says in all the dessections of serous apoplexy which
I have directed, although the veins were not very turgid
there were marks of increased arterial action shortly
before death. consequently were the patient beyond
a doubt labouring under serous apoplexy - I do not think
his chance of recovery would be lessened by venes-
-ection; indeed from every circumstance, I should think
myself justifiable in recommending this measure before
the usual ones were tried. as blisters to the scalp &c

The same author says he has attended fifty cases in which there was room for practice of these only one was a case of serous apoplexy - the rest to my appearance were sanguineous, some of which were demonstrated by subsequent dissection. Now admitting this proposition (one to fifty - some authors deny there being such a thing as serous) cannot a very good argument be founded upon this in favour of the lancet. There is another which is taken from nature herself, that is epistaxis, some persons who have any symptoms of apoplexy are relieved by the loss of one or two quarts of blood from the nose. The blood can be abstracted from any large vein of the arm or from the temporal artery some prefer the jugular, but there are many objections to this practice. Sometimes we have to apply a ligature to the vein to make it swell so as to bleed - but the best argument in favour of not bleeding from it is, that you take the blood from the general circulation whether you take it from the jugular or from the arm because you cannot draw blood

from the internal jugular, that is impossible or would be 22
improper, — We must take blood from a large orifice, and
at the same time in sufficient quantities, the first and
second bleeding should be large, afterwards the pulse
must be more attended to, You must judge of the quan-
-tity by the habits of the patient, and also by the way
the attack commenced, by its violence and duration, the
effect its has upon the system, the appearance of the blood
which is often sizy, and the state of the circulation
particularly the relief of the pulse and breathing and the
complexion, One moderate bleeding may prevent the attack
when at the same time it will take several to relieve
him after he is attacked, that is if he is in a situation
admitting of relief, From the destruction of the organ
or sinking of strength, there is doubtless in this, as in any
other disease, of increase vascular action, a period, at which
there could be no hope, the use of the lancet would
be of no avail in this state, but as it requires great
knowledge to be able to distinguish this time (more says
Dr Cheyne than I have been able to attain) I believe ...

he says, it is a good rule to have every patient, who is not pla- 23
-ly dying, bled, and if the patient is past the period of
bloodletting, the only thing that is necessary is to let him
have all the comfort and consolation which a dying man
requires. Morgagni Walter & Portal have sanctioned the
use of the lancet in apoplexy. When the disease is apprehend
-ed but the danger not imminent local bleeding is to be
preferred. The local bleeding like the general must
be regulated by circumstances. If apoplexy should appear
after an attack of gout or in a gouty subject, the use
of the lancet is to be recommended

## Emetics and Purgatives

Emetics have generally been considered as one of the
means of curing apoplexy, particularly when the attack
has followed a hearty meal, or such cases as have been
considered of the serous or pituitary kind, but as the
doctrine of pituita has been exploded by all intelligent
physicians, emetics have fallen into disrepute both in this
country, and in England, but in France, they are
still employed extensively. Leutaud recommended

them in large doses and even Portal, although he reprobates 24
the practice, still falls into the rotine practice of the French
physicians, he gave emetics in some of the very cases
which he brought forward, to prove the necessity of
bloodletting, and the danger of emetics. Emetics are
frequently ordered by physicians in England from the
belief that the disease is connected with a full stomach
With this view Dr Fothergill again revived the practice
of giving emetics in this disease and upon the authority
of this physicician it still rests. Dr Fothergill says
we must give the patient an emetic, of tartarized antim
ony or Sulph Zinci and if the strength of the patient
becomes exhausted, you must give him wine or any
cordial, how different do physicians treat this disease,
the Doctor is one of a thousand and if he had known
the effect of apoplexy on the brain he certainly could
not of continued in the same opinion. I do not deny
that when apoplexy is threatened after a surfeit or from
intoxication, then the administration of an emetic would
relieve him almost immediately, but if the patient was

attacked, with the disease, or he is in a fit, you must bleed, 25
and if you carry it to the proper extent, you will produce
vomiting, and then the blood you have drawn will pre
=vent rupture of the arteries - In confirmed apoplexy even
the most mild means would be attended by the most
consequences - When a person is struck with a fit, bleed and
give the most active purge, and the distention of the stomach
will be removed - Nausea and the control which it has
over the vascular system, while the sensation lasts, would
seem to offer great advantages, but unfortunately we cannot
regulate the medicine, so as to keep a proper degree continually
or even for a short time - Sydenham recommended them
but they were falling into disrepute when Dr Fothergill appeared
as their greatest advocate, and they have been administered
by practicioners on his authority ever since
As soon as the patient can swallow an active cathartic must
be given, Calomel is generally prefer to any other on account
=nt of the liver being affected and it can be given in such
small bulk - To secure a speedy operation we should give
some other cathartic, such as operates on the upper part of the

alimentary canal as Rhubarb, Jalap, or Scammony or a draught of the infusion of senna, in half an hour after the calomel has been given to secure, and quicken its operation

## External Applications

Physicians have generally ordered a blister to be applied to the scalp, as soon as they see a patient in this disease, but this practice I should think, would not be proper— In an acute disease it is impossible, to obtain with exactness the operation of any remidy. The absorption of the cantharides has very little effect on the system— Much cannot be attributed to the evacuation of serum, because this evacuation, is produced by increased action of the vessels The primary effect of a blister, is rather a tension, than a relaxation of the vessels (Cheyne) Physicians formed there doctrine of revulsion, and were led to the use of blisters, to effect this purpose— If a blister is to be applied let it be to the back of the neck, and there it has the desired effect, but if they are applied to the scalp, when the vessels of it and the membranes of the brain, are so closely connected, we cannot expect it to do any good, but must do harm

by increasing irritation, and consequent inflamation. Dr Cheyne 27
says he never saw blisters do good in this disease, before bleeding
but that after venesection, they have had a very excellent
effect. Blisters to the scalp also prevent the use of cold
applications which are very beneficial in this disease
such as sponging the head with vinegar and water
the application of a solution of muriate of ammonia
or what is better a bladder filled with pounded ice
and applied to the head

Of the management of the patient
This is very simple, he ought to be laid in a large
airy appartment, with his head raised, as well as
his shoulders, with pillows, a free draught of air should
be made (if possible) to pass over his body, of which
the upper part, should be left uncovered, so as to res-
=tore the balance of the circulation, the extremities
should be kept warm by fomentations, and bottles
of warm water, or bladders filled in the same way.
After the evacuations, blisters may be used, applied to
the extremities, viz to the ankles and wrists

When the patient is recovering we must be very cau- 28
-full as to the diet he takes. Very light articles of food
should be allowed, and the patient must be told
of the danger which would result from indulging
in eating and drinking - He must not over
heat himself in any way - Exercise on horseback
or in a carriage, if he is not used to the former
modes will be benificial. All the passions will
be very apt to bring on a second attack, such as
rage, fear, grief, or indulgence in venery to an
excess are the principal ones, that gives rise to it
when the patient is predisposed, or has had an
attack before -

# An Inaugural Dissertation

## on Lithotomy,

Submitted to the examination of the

Provost, Trustees, and the

Medical Faculty of the

University of Maryland,

For the Degree of Doctor of Medicine,

by Thomas S. Franklin

of Annapolis Md.

March 1834.

To

The Medical Faculty of the
University of Maryland —

Gentlemen,

Impressed with feelings of Gratitude, for the unwearied care & assiduity with which you have ever labored to impart instruction not only to myself but to others who have had the advantage of knowing you; and of admiration, for your untiring Zeal in the diffusion of Knowledge, and promotion of Medical Science, I gladly take this occasion of testifying them —

That you may long live to enjoy the fruits of your justly extended reputation, is the sincere wish of

your attached friend

J J ——

To

Doct^r John Ridgely

and

Doct^r John Ridout

of Annapolis

This dissertation is dedicated

as a

Testimony of the respect & admiration

entertained for their virtues & Worth

as men

and for their skill and ability

as Physicians

by

their affectionate Pupil

The Author

(1) I state this fact on the authority of M. Velpeau having referred to Hippocrates work without being able to find any allusion to this subject

# On Lithotomy

Lithotomy is one of the most ancient operations of Surgery, and one which has attracted more attention, and excited more discussions than perhaps any other single operation — It was (and indeed is now in the hands of unskillful or inconsistent Surgeons) one attended with more immediate hazard to the patient, and productive of more serious consequences than almost any other, but modern Surgery, and, I think I may say with propriety, the ~~efforts~~ improvements of one Surgeon hereafter to be mentioned, have stripped it of nearly all its terrors, and rendered it one of the simplest of the Capital operations —

This operation was practised by a set of itinerant Surgeons who made it their sole occupation, as early as the days of Hippocrates — He alludes to it in his works but does not describe it, indeed so great a horror had the Father of Physic of this operation, and so deeply impressed was he with its formidable nature, and the impropriety of its being done, that he is said to have bound all his pupils by an oath never to attempt it — He was principally induced to this it is said, by the fact of those Itinerant Operators having sometimes cut patients for the Stone who had no stone in the bladder

* The operation described by Celsus was not originally performed by him, it was performed before his time by Antyllus of Alexandria, but as Celsus first described it, it has always been called in honour of him Methodus Celsiana

1 Velpeau

and by their having done the operation in such 2.
a manner as to cause their death —

*Celsus was the first who has given any description of this operation — He describes it very distinctly in his 7th book de Re Medica — He also stimulated it as of a very formidable character, and laid restriction upon its performance except under certain circumstances — For although he advises it to be performed upon individuals under 15 years of age, yet inculcates most strenuously that it should not be done after this period

These instructions of Celsus were adhered to by Surgeons for a considerable time, but now individuals of both sexes and all ages (under favourable circumstances) may be submitted with safety to the operation —

— The object of this operation, is the extraction, by an artificial opening, of foreign bodies called calculi that have been arrested or developed in the Urinary bladder —

— The term Lithotomy was formerly & indeed is now by the Germans as a Generic term to express any operation by which calculi were extracted from any portion of the Urinary passages — But now (except by the Germans) it is applied solely to that operation whereby Calculi are extracted from the bladder — This term (Lithotomy) has been objected to by authors (with propriety) as being unscientific and not at all significant — and indeed from it

1 Dictionnaire des Sciences Medicales

Etymology (Lithos a stone & Tripsis I cut) one would infer that there was an actual section of a stone - The term La Taille, which is generally applied to this operation by the French par excellence as it were, is perhaps equally indefinite - Probably then the substitution of the word Cystotomy, as proposed by M. Jourdan would be more scientific, inasmuch as it designates at once both the seat of the operation and the principal organ concerned in it -

Symptoms and diagnostics of Stone in the bladder -

Calculi are sometimes formed originally in the bladder, but more frequently they are developed first in the kidneys and pass down along the ureter into the bladder - They are liable however to become arrested either in the kidneys themselves or in the course of the ureters, in which case they give rise to symptoms of which it will be proper to speak briefly before detailing those produced by the stone in the bladder - When the foreign body becomes arrested in the kidneys, the principal symptoms giving evidence of its presence there are the following - The patient experiences considerable uneasiness or frequently severe pain in the region of the kidneys after these symptoms continue for some time the urine generally becomes bloody, & there takes place painful retraction of the testicle of the affected side, and

There is also ordinarily considerable sympathetic irritation of the stomach characterized by frequent nausea vomiting &c.

Generally these symptoms may be relieved, and the passage of the Calculus from the kidney facilitated by the employment of such means as are calculated to subdue irritation in the parts, as moderate bleeding general & local, evacuate the bowels, tepid bath, & emollient or anodyne fomentations to the region of the kidneys — Sometimes however the calculus obstinately remains giving rise to the formation of an abscess in the organ, which, if it discharges internally will probably cause the death of the patient, but if externally he may do well — When the calculus does not pass readily from the kidney, but remains giving rise to the troublesome symptoms enumerated, it has been proposed to remove it by an operation, to which the term Nephrotomy has been applied, — I do not know whether this has ever been done —

A Calculus sometimes becomes arrested in its passage along the ureter — in this case if it remain long in the canal, it will produce severe pain shooting along the course of the Ureter extending to the interior of the Pelvis. If its progress to the Bladder be completely arrested, then the pain augments greatly in severity, symptoms of irritation of the Stomach & testicle soon arise, most violent fever and delirium frequently supervene, the parts become effected with inflammation, and a fatal Peritonitis puts a

termination to the disease — If means calculated to subdue irritation &c do not relieve the symptoms, nothing will avail, for here surgery can do nothing — Operations for the removal of the calculus under these circumstances have been condemned as decidedly improper & indeed unjustifiable — — — Of symptoms produced by the actual presence of the stone in the bladder there are not a few they are however very equivocal — indeed of the numerous symptoms mentioned by authors as characteristic, there is absolute not one which can be relied on as indicating with certainty the existence of stone in the bladder, even in sounding (as will be seen afterwards) which generally affords us some evidence there is liability to deception —

If the stone shall have been first developed in the kidneys and have acquired some magnitude, then the symptoms about to be described will be preceded by those already mentioned as indicating its presence in the kidneys & ureter —

As soon as the stone has attained a size sufficient to give annoyance, the first symptom indicating its presence to the patient will be, the frequent desire he experiences to make water & the pain he suffers while passing it — frequently while the urine is flowing in a full stream, it will suddenly stop, & the patient experiences a sensation as if a body had rolled into the opening of the urethra completely blocking it up — by changing his position, as by lying on his side or back, he will

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1 S.t Cooper - Surgical dictionary - vol 2d

be again enabled to pass the urine in a full stream. This circumstance is generally regarded as very characteristic of the disease, though as we shall see afterwards it may be owing to other causes. Another of the earliest symptoms, is a sensation of heat & itching at the extremity of the Glans Penis. The patient contracts a habit, from the momentary relief which it affords him, of pulling at the prepuce by which means it frequently becomes very much elongated in calculous patients. A dull pain & a sense of heaviness & weight is felt at the lower part of the Pelvis & by the side of the fundament. This pain is always increased by motion of any kind, particularly that communicated by riding in a carriage or on horseback. A quantity of calculous particles, & flocculent mucus (after the disease has existed for some time) are discharged along with the urine, which is almost always bloody & frequently purulent & fetid. It also exhales an intolerably alkalescent smell which is perceived at the moment of the evacuation, & becomes particularly strong a little while afterwards. It has been remarked that the pain which is experienced in making water is always increased in proportion as the bladder empties itself, and is most severe just after the last portion has been expelled. This is owing to the calculus by the contraction of the bladder coming

(1) Dictionnaire des Sciences Medicales vol 28. art Lithotomie par Jourdan & Begin.

into contact with the inflamed and irritated mucous surface of that organ. — After the disease has existed for a considerable time, the patient can no longer take much exercise without his complaints being redoubled — Whenever he moves about much, the urine becomes bloody — the pain about the neck of the Bladder, which was dull in the beginning, grows more & more acute, the ureters & kidneys participating in the irritation inflame & suppurate, & very soon the urine brings along with it purulent matter. The coats of the Bladder become thickened and indurated and in some instances take on a cancerous condition (1) — The Stomach and intestines now become the seat of Sympathetic irritations, characterized by loss of appetite — febrile irritation or colliquative diarhea comes on which rapidly exhausts the patient's strength — At length the poor patient, worn down by his continual sufferings, and exhausted by the repeated evacuations to which he is subjected, unless relief be speedily afforded by the removal of the stone, expiremes in death a relief from all those sufferings which contributed to render life insupportable ——— Now although all these symptoms are produced by a stone in the Bladder, yet, as was said before, they are by no means to be relied on as indicating with certainty the pursence of a calculus, because they

(1) Sir J. Earle in L. Cooper

are all equally produced by other causes — Thus, "pain in making water & inability to retain the flow while the urine is passing off, are common consequences of irritation of parts about the neck of the bladder, from a diseased Prostate Gland and other causes. The sudden arrest of a full stream of urine may be produced by a tumour or fungus in the bladder, this attached by a narrow pedicle may at one time cause obstruction, & again by alteration of the posture of the patient may retire & give a free passage to the urine. The dull pain at the neck of the bladder & the sense of heaviness in the Perineum, may be caused by diseased enlargement of the Prostate Gland as well as by stone — The Muco-Purulent matter discharged along with the urine, is frequently a consequence of chronic inflammation of the mucous coat of the bladder" (1) And the itching at the extremity of the Penis, which has been looked on by some as exceedingly characteristic, is by no means so, this we know first from the fact that, when irritation is set up in any portion of a mucous surface, frequently sensation is only produced at that point at which the internal mucous membrane becomes continuous with the skin — thus we frequently see irritation seated in some portion of the alimentary canal, manifested by itching at the extre-

mity

of the sore — This itching Pain at the extremity of the Glans, is only a symptom of irritation of the mucous membrane of the bladder which may be produced by other causes as well as Calculi —

Though from an attentive consideration of all the circumstances of the case, a surgeon may form a probable opinion of there being a stone in the bladder, yet, as Mr. S. Cooper correctly remarks, he should never presume to deliver a positive one, nor be so rash as to undertake Lithotomy, without having more positive signs and such as leave no doubt in his mind that there is a stone to be extracted — Now it is the procedure called sounding which furnishes these, it alone is capable of affording us a certain knowledge of the existence of Calculus — All prudent Surgeons therefore hold it as a maxim never to attempt Lithotomy, without having previously ascertained the presence of the stone, by means of the introduction of a metallic instrument (called a Sound) into the bladder —

Various instruments, made of different metals have been proposed by Surgeons for the purpose of sounding — but the ordinary silver catheter or steel sound are very well calculated for this purpose — The instrument is to be introduced through the urethra into the bladder first while the latter organ is full of urine, in order that

every portion of its parietes may be examined with more facility, the catheter is then to be moved in every direction, up & down & inclined to either side until the stone is felt— if this does not succeed, we must then make the patient change his position,— If we have made the examination first while the patient is in the recumbent posture, he must now be made to arise, & sometimes he is made to walk about, in order ~~that~~ that the stone, if it is not attached may fall into the bas-fond of the bladder— Professor Physick recommends that the patient be placed on his head, so that the fundus of the bladder being made the lowest part, the stone will roll into it and come into contact with the point of the instrument— He states that he has by this means succeeded in striking the stone, after other Surgeons had failed in their attempts to find it— If by this means we do not succeed in striking the stone, the urine may be allowed to escape through the catheter, & then as it is expelled the stone will be carried forward to the neck of the bladder and will come into contact at that point with the instrument— Sometimes when the catheter is very small all these means fail to detect its presence An ingenious expedient was devised by D^r. N. Smith late Professor of Surgery in Yale College, for examining

(1) Vid. Smith's Med. & Surg. memoirs, art. Lithotomy by Prof. N. R. Smith.

(1) Dictionnaire des Sciences Medicales vol 28.

the bladder when this is the case— he used a flexible gum catheter or bougie tipped with a bead of silver; this it is evident could be made to glide with facility over every portion of the surface of the bladder, & of course must come into contact with the stone if it exists. Dr. Smith once succeeded in striking a stone with this instrument, which every other mode of sounding had failed to detect ——

The sound not only indicates the presence of the stone, but also gives us some information with regard to its size situation &c (2) Thus, if upon introducing the instrument into the bladder, a stone is encountered immediately upon its entrance into that organ, & notwithstanding the various positions the patient is made to assume, it is still felt, and if upon impressing different motions upon the instrument, we continually feel the stone, occupying as it were every portion of the organ, we then have reason to infer that the stone is large or that there are several of them— Opposite circumstances of course indicate that the stone is small & single— on the other hand if the exploring instrument always meets with the stone in the same situation, notwithstanding the various positions in which the patient may be, & if it is only lost when different motions are impressed on the instrument, these circumstances

indicate that the stone is adherent somewhere to the mucous coat of the bladder — should the stone be felt sometimes at one point & sometimes at another should we not be able to touch it in the same place, in the recumbent & erect positions we then conclude that it is free & unattached to the bladder — we likewise judge of its consistence by the different sensations communicated to the hand & the ear — when the stone is covered by the internal membrane of the bladder or by a membranifform substance, it will communicate to the touch a sensation somewhat similar to that presented by a soft calculus, but more nearly resembling that presented by a tumour of a fungus developed and projecting into the bladder — It was mentioned when speaking of the rational signs of stone in the bladder, that they were exceedingly equivocal, and that sounding, although generally the only means we are possessed of by which we can determine with positive certainty the existence of Calculus does not always furnish us with satisfactory results — This then (a case of fungus tumour in the bladder) is one of the ~~evidence~~ cases in which the evidence afforded by sounding are by no means clear and satisfactory — another condition of the bladder which might be mistaken for Calculus is

(1) These circumstances are only mentioned for the sake of showing the necessity of being careful in examining, and cautious in pronouncing an opinion or determining to operate — there is no doubt, or rather there is great probability that, by careful attention to set a stone might be distinguished from all these conditions

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(2) The celebrated Desault once operated upon a child who was supposed by him to have calculus, all the rational signs of stone were present, & he thought he struck it with the sound; but after cutting into the bladder no stone was found — the child dying in a few days, the coats of the bladder were found in this condition, (endurcies - racornis) — vid Dict des Sciences Medicale, tom: ut ante citat.

that in which the internal surface is covered by a tuberous incrustation, or when the membrane has been converted into a substance of a horny, cartilaginous hardness, when this is touched by the instrument, it will communicate a sensation very similar to that produced by striking a stone — indeed the operation has been done under these circumstances & this condition of the bladder existing, & the death of the patient has been the unfortunate result —

— Hence the importance of the rule laid down by Surgeons, viz that no Surgeon should ever put into the bladder for the purpose of extracting a stone, without being positively certain without there being the least doubt in his mind, that a stone is there — he should not only have struck it himself distinctly in the presence of Spectators, but should also have made another Surgeon do it —

Having thus in a cursory manner described the symptoms of stone in the bladder, our next inquiry is by what means are these symptoms to be relieved the indication is very manifest to take away the cause of all the symptoms by the removal of the calculus — The old opinions, about Lithontriptic or medicines administered internally for the purpose of dissolving the stone, and injections thrown into the

(1) L. Cooper op. Citat.

bladder for the same purpose being now given up for very obvious reasons, the stone can only be removed by a painful operation, whether this consist in cutting into the bladder and taking away the stone in a state of integrity, or in grinding it to powder, that it may be discharged with the urine, by means of apparatus introduced into the bladder through the urethra without cutting. It is true that when the stone is small it may be extracted through the urethra by means of Sir A. Cooper's forceps. Indeed this eminent Surgeon as well as Mr. Brodie have sometimes extracted them when they were of considerable size, as for instance of the diameter of half an inch — it is always necessary to dilate the urethra very much in these cases by means of bougies &c. and this is exceedingly painful. Surgeons however do not frequently have opportunities of practising this procedure because patients rarely apply for Surgical advice and assistance, or if they do are not disposed to submit to any operation for its removal, until the stone has acquired such a size as to render its removal through the urethra impracticable. — Before speaking further of the operations it will be proper to describe briefly the anatomical relations of the parts concerned in it

The whole space or region included in and bounded by the circle of the inferior straight of the pelvis, is called the Ano-Perineal Region. The transverse diameter of the straight or a line drawn from one Tuberosity of the Ischiums to the other, divides the Ano-Perineal region into two triangular spaces, of which it constitutes the common base, The apex of one triangle directed forwards & terminating at the lower part of the Symphisis Pubis, the apex of the other directed backwards & terminating at the os coccygis— The Anterior triangular space, constituting the Perineal region proper, is that through which the bladder is reached in performing the Labial operation— The following description of the structure found in this region is taken principally from M. Velpeau in his Surgical Anatomy, and Elemens de la Medicine operatoire——

Upon raising the integument of this region, we find a layer of subcutaneous cellular tissue, which is considerably lax in its structure, however in proportion as we penetrate more profoundly, it becomes more filamentous in its character, and forms on each side in the space between the Ischio Pubic Ramus and the muscles of the belly, a fibrous mass sometimes pretty dense, and which continually increases in density in proportion as it is prolonged backwards between the

(1) Velpeau, Surgical Anatomy Vol 2nd

Ischium and the termination of the rectum.
Under this lies the aponeurosis of this region, or
rather aponeuroses for it is double consisting of two
layers, one superficial or inferior the other more deeply
seated. These two layers are seen by tracing it from
behind forwards, from the point at which the aponeu-
rosis of the anal region becomes continuous with
it. We find that at the border of the Transversalis
Perinei muscle, it sends off a superficial portion, which
is spread over the inferior face of this muscle as well
as the bulbo & Ischio Cavernous Muscles. Then passing
forwards, it passes under the Corpora Cavernosa &
Urethra & becomes continuous with their fibrous
envelopes. The deep seated portion (called also the
middle aponeurosis in contradistinction to the
superficial or inferior & the Superior or Pelvic Aponeu-
rosis) passes over the above mentioned muscles & the bulb
& the Urethra & Corpora Cavernosa, and becomes
attached to the Subpubic ligament. This portion of
the Aponeurosis contained within the ~~I~~ Pubic
arch is of a triangular form and is perforated by
the Urethra. This Belgian calls the triangular liga-
ment of the Urethra as first described by M. Colles
of Dublin. This Aponeurosis by the side of the Rectum sends
off a fibrous expansion which envelopes that Gland

It will be seen then that the superior portion of the aponeurosis is separated from the middle, by the bulk and apart of the membranous portion of the Urethra, as well as by the proper muscles of the Perineum, and it is between these two layers, that the incision of the Urethra is commenced in the lateral operation — Of the Superior sheet of the aponeurosis called Pelvic Aponeurosis by Dr Velpeau it is unnecessary I think to give a very minute account — Its relations to the Operation in question are not very important — though some anatomists have of late dwelt particularly upon one portion of it as bearing very important relations to the operation — It is that portion denominated Pelvi Vesical fascia — It is true that if this fascia be cut in executing the deep incision, there is danger that the urine will infiltrate into the cellular tissue behind it, and give rise to the formation of extensive sinuses between the bladder & rectum; and in the operation as commonly performed with the Gorget there is perhaps some danger of its being wounded, but in the operation recommended by Dr Smith, such a thing cannot happen, because the extreme point of the deep incision always terminates anteriorly to this fascia — The Pelvi fascia is continuous with the

Fascia Iliaca at the Linea Ileo Pectinea — anteriorly it stretches between the bladder and the Pubis constituting the anterior ligaments of the bladder it passes backward by the side of the bladder, passing over the surfaces of the Levator Ani & Obturator Muscles and is posterior by the rectum — The fascia thus constitutes a kind of Septum dividing the cavity of the Pelvis into two portions, an inferior and superior ..... It is unnecessary to say much of the muscles of this region, inasmuch as they have no important relations with the operation, none of them indeed are at all concerned in it, with the exception of the Transversalis Perinei, this is always divided in the actual operation — the incision should never be commenced sufficiently high to involve the accelerator Urinæ ----- Arteries of the Perineum — They come principally from the trunk of the Internal Pudic — The inferior Hæmorrhoidal, which is the first branch given off by that trunk, as it arises very far back and is confined to the rectum and its immediate vicinity, is never in danger of being wounded unless the operation is done in such an awkward manner as to involve the gut itself — The Superficialis Perinei, arises just in advance of the first, at the posterior border of the Transversalis Perinei Muscle, it immediately pass-

(1) vid Velpeau's Surg.l Anat.t - vol 2nd

through the Aponeurosis, & covered only by the skin and subcutaneous layer, passes forward along the inner border of the Ischio Cavernosus muscle, to be distributed to the dartos skin and cellular tissue of the Scrotum — sometimes this artery takes a direction more nearly approaching the median line than here described, in this case it is very liable to be cut in executing the incision, however as it is so superficially situated it can be easily secured in a ligature — Sometimes though rarely, this artery gives off the rest the Transversalis Perinei, more frequently it comes off from the trunk of the Pudic, just at the posterior and outer portion of the Trans. Perinei muscle, it crosses the muscle obliquely inwards and inferiorly, and passing on towards the median line gives off three principal branches, to the Anus bulb & one to between — it inosculates on the median line with its fellow of the opposite side, and forms a network of vessels about the neck of the bladder, just at the point where the knife enters on its withdrawing, consequently there may be expected considerable hemorrhage from this source, especially if the incision of the neck of the neck of the bladder is made too free — this artery is unavoidably cut in withdrawing the knife, (in making the incision from the within outwards) M. Velpeau speaks of the difficulty of applying a ligature to this vessel when wounded, and advises the

employment of compression or the application of the actual cautery for the purpose of suppressing hæmorrhage from it but these difficulties appear to be only imaginary I have seen it secured in a ligature, in one instance in which it was wounded by Dr Smith in performing this operation, with all the facility imaginable.

The trunk of the internal Pudic lying upon the superior & internal face of the Tuber Ischii, and between the inferior & middle layer of the aponeurosis, is never in danger from the knife, when the operation is done as will be described afterwards. this artery has been cut by the Gorget, & by the double bistoire cachè, the instrument used by Baron Dupuytren in performing the Bilateral operation.

Anomalous arteries are sometimes found in this region. M.r Shaw of London gives an account of a remarkable anomaly observed by him in a case in which he operated an artery of considerable size taking its origin from the Hypogastric, coursed along by the side of the Prostate Gland, but passing in a direction from behind forwards. this artery was necessarily divided by him in the operation, and his patient died from a hæmorrhage which could not be commanded, dissection revealed the existence of this anomalous artery. —— Veins of this region

There are two Venæ Comites accompanying each artery & around the Prostate and neck of the Bladder they

form an intricate Plexus of which the veins are in old persons and calculous individuals, large & varicose. This abundance of vessels about the neck of the bladder is one of the principal reasons that induced Dr. Smith ~~to~~ to adopt the method of making this part of his incision rather limited, believing that the fatal termination of many cases is owing to the circumstance of the hæmorrhage from these vessels.

The bulb and the anterior portion of the membranous part of the Urethra, are covered only by the skin, loose cellular tissue, the fibres of the bulbo cavernous muscles, & the Perineal fascia and are separated from the anus by a space of about eight or ten lines. The posterior part of and the Prostate portion of the Urethra is situated above the middle aponeurotic expansion, are enclosed in a space which is bounded posteriorly by the anterior face of the rectum, inferiorly by the middle layer of the Aponeurosis, and superiorly by the superior or Pelvic aponeurosis. This space is filled up by loose cellular tissue and by small muscles, which passing down from the Pubis to expand upon the inferior surface of the Urethra are called Muscles of Wilson. The Urethra here enjoys more mobility than at other points, being less mobile just at that point at which it becomes engaged in the Triangular ligament.

O Velpeau Surgical Anatomy

That portion of the Canal of the Urethra called its Prostatic portion, is surrounded by a large irregular body of a shape somewhat Pyramidal called the Prostate Gland. The size of this body varies much according to the age and particular condition of the individual. Its dimensions however, according to the researches of Mr Velpeau, as a general rule may be stated as follows. Its Antero-Posterior diameter from about 12 to 15 lines, the vertical from 10 to 12 & its transverse diameter from 15 to eighteen lines. The base of the Pyramid directed backwards is excavated to receive the summit of the bladder, its apex is prolonged forwards as far as the membranous part of the Urethra.

This Gland is invested by a kind of sheath in which muscular fibres can be discovered continuous on the one hand with the muscular coat of the bladder, and on the other with the muscles of Wilson. Indeed it seems to be enclosed between the muscular & fibrous membranous layers of the Urinary passages. It receives moreover another investment from the Pelvic aponeurosis which is continuous above with the Pelvic aponeurosis; this is called the Prostatic fascia. The Gland is separated from the rectum by a thin

layer

layer of cellular tissue which contains no fat even in the fattest subjects — The canal of the urethra which traverses this gland is always situated nearer its pubal than its rectal surface. This arrangement may be regarded as a fortunate circumstance in relation to the operation, for if the urethra were situated as near to the lower surface of this gland, as it is to the Pubal surface, the rectum could scarcely escape the knife or the Gorget in executing the deep incision. The Prostate is also turned in a direction from behind forwards, and from without inwards, by the ejaculatory ducts of the Testes and Vesicula, these however escape the incision being carried below them —

There is seen intervening between the face of the rectum and the commencement of the urethra, a kind of Triangular space filled up by cellular tissue connecting the two — This space is bounded anteriorly by the membranous portion and apex of the bulb of the urethra, posteriorly by the anterior face of

(1) Velpeau. Nouveaux Elemens de la Medecine Operatoire. Tom: III

of the rectum, & inferiorly by the superficial Perineal Aponeurosis or rather by the integuments. The base of the triangle it is seen then will be represented by the skin, and its apex by the point of the posterior face of the Prostate — it is filled up by cellular tissue by some portions of the fibres of the ~~[illegible]~~ accelerator, the Transversalis, and Sphincter Ani muscles, also by a part of the bulb of the urethra, by some of the branches of the Transversalis Perinei artery, and by the Aponeurosis. — This triangular space was first particularly described by Baron Dupuytren in 1812, & it is very important to have a knowledge of its extent and relations, because it is traversed by the cutting instrument in every species of Perineal Lithotomy. — Having thus passed hastily in review the relations of the neural structures we find situated in that region, which is the seat of the Lithotomic operation for the stone in all modifications, it now remains to make some observations with regard to the operation

procedures by which the stone is to be extracted. It is by no means my intention at the present time, to give a complete account of this operation, and of the various methods & modifications of it that have been practised by Surgeons from the time of Celsus to the present day. I deem this totally unnecessary, were I to do this it would protract this Thesis (already too long) to a length altogether unprecedented. Indeed I shall only describe that modification of it as performed by Prof. Smith of this University, believing this to be the simplest and safest, and one which, when all its advantages & the uniform success that has hitherto attended it are more generally known, will supercede every other mode of cutting for the stone known to Surgeons of the present day.

This operation is performed in the Perineal region proper, the incision being commenced just behind the bulb & on the membranous portion of the Urethra, and terminating on the line of the base of the Triangle representing the Perineal Region, at a point about midway between the Anus and the Tuber Ischii. The structures involved in the

(1) I expected when this was written to be able to procure drawings of the different parts of the apparatus, & attach them to the Thesis, but was disappointed — The description of the instruments will be hardly intelligible without the drawings to illustrate it —

(2) Sir J. Earle is represented to have used an instrument similar to this in ~~one~~ one respect,* his staff had a director ~~similar~~ nearly resembling the ~~one~~ here described, which, (being provided with cutting edges at its lower part) when it was shut down upon the long staff, pierced the skin and membranes of the Urethra, and entered the Groove of the Staff — The credit however, of devising the most important modifications of the Instrument, ~~was~~ the form of the curvature of the staff, the depth and direction of the groove, & the Index, is undoubtedly due to Professor Smith —

* Coopers Surgical Dictionary — vol 11 — art Lithotomy

incision, are the skin, the membranous & prostatic portions of the Urethra, the sheaths of the Prostate Gland & Bladder, also the Transversalis Perinei muscle & the cellular tissue filling up the space between the skin & Prostate—

The apparatus required for the operation, consists of a Knife of peculiar construction, a Knife whose handle & blade form an obtuse angle with each other, forceps &c. I may include also among his apparatus a table differing considerably from the ordinary operating table. This table, as will be seen in the drawing, differs from the ordinary one, first by the addition of the piece of board passing transversely across it, & hollowed out for the reception of the neck of the patient— Secondly in the two bars projecting obliquely from the end of the table, & connected at their upper extremities by a transverse bar— on the latter are nailed two slippers, into which the feet of the patient are placed and bound to the bar by a bandage—

(1)

(2) The knife, (also represented in the drawing) employed by Dr Smith, consists of a large silver catheter attached to a broad handle— the lower portion instead of being convex, is nearly straight from its convexity

to the point — a portion of the catheter is filed out from its curvature to a point a few lines from the extremity of the instrument, this then represents the groove the depth of which corresponds to that of the catheter, and its direction (this is the important circumstance) is spiral from the dorsum to the lateral aspect — Traversing the canal of the instrument, is a slender wire, to the lower extremity of which is ~~at~~ attached a little bead of brass; the upper extremity of the wire, larger & broader than that below, passes thro' the handle of the instrument, & projects from the top of it, this is called the index; — this is drawn up when the operation is about to be performed, so that the little bead shall be just below the point at which the knife enters the groove of the staff, then as the knife is pushed forwards it becomes engaged upon the bead, and pushes it on before it into the bladder; so that by the index continuing to descend the operator is assured that the knife is passing along the groove of the staff safely into the bladder — Attached to the handle of the staff by a hinge is the director, this, about an inch from its inferior extremity, is bent at almost a right angle and grooved, this director being let down upon the staff

conducts the knife directly into its groove —

The patient about to be operated on, is placed on the table, his neck & back supported by pillows, & his feet bandaged to the transverse bar, he is to be made to grasp the upright bars with his hands to which they may be bandaged or not — The Staff is to be introduced and held by an assistant in the ordinary manner — The director is then let down upon the staff or rather upon the skin covering it just posterior to the bulb of the Urethra — the director serves to fix the skin upon the staff, and to prevent it from gliding before the knife, as well as to guide the knife into the groove — The index is now to be drawn up to the proper height & the extremity of the director pressed firmly upon the staff, the Operator sets the back of the knife into the groove of the ~~staff~~ director, then pushing the knife forwards to pierce the skin & membranes of the Urethra and enter the groove of the staff, he should now raise the knife a little & push it backwards once or twice in order to feel that it strikes against the bottom of the groove; being assured that it is fairly in the groove he now pushes the knife along it steadily into the bladder, observing to follow the precise direction of

the groove, by ~~carrying~~ turning the lower part of the handle of the knife slightly outwards — as soon as the shoulder of the bladder is fairly incised, (& the Operator is informed that the knife has entered the cavity of the bladder not only by the gush of urine, but more certainly by the index having continued to descend in proportion as the knife was carried forwards) the Operator will withdraw the Knife, and in doing so dilate the incision downwards & outwards, terminating it a point situated midway between the Raphe of the Anus & Tuber Ischii.

Dr Smith always avoids making the wound of the bladder any extensive, but endeavours to make this part of the incision of as little extent, and, as he withdraws the knife, to incise freely the anterior part of the Prostate, and to make especially the external incision very free — The Knife being withdrawn and laid aside, the Operator introduces the fore fingers of his left hand through the wound into the bladder — The staff is now to be withdrawn, and if the stone is large, it will be necessary for the Operator to dilate the wound of the bladder somewhat with the fingers, this can be easily done & without any danger of causing hæmorrhage

if the dilatation be effected cautiously & gradually— the wound can in this way be dilated to almost any extent— The forceps should now be introduced the finger in the wound serving to conduct it, and the stone seized and extracted— The bladder should not be expanded as soon as the instrument enters the bladder, lest in doing them the internal coat of the bladder should be included in them and injured, but the instrument should be used as a kind of probe to search for the stone with the bladder closed, and when the stone is struck, the bladder may be then expanded & the stone seized and extracted —— When the stone is encysted, it generally gives the Operator a good deal of trouble, especially if it is attached to the bladder at some distance from the orifice of the wound— Dr Smith, having encountered precisely difficulties of this kind in the last case in which he operated, ~~has already~~ (the patient having been one hour on the table before the stone was got out) has already devised a plan of procedure which will no doubt answer admirably the purpose for which it is intended— he will introduce into the bladder an instrument having one extremity bent & shaped

somewhat like the end of the handle of a spoon, this is defended by Gum elastic to prevent it from giving pain; the body or stuff of the instrument is smaller so that it may be moved with facility in the orifice of the gut — the spoon like part of it being carried up to the fundus of the bladder then can be gently drawn towards the neck of the bladder, so that the stone will be brought into the axis of the wound, where the Surgeon can operate on it to greater advantage —

With regard to the treatment of the wound produced the best Surgeons of the present day advise that it should not be stuffed with lint at all and — Dr Smith after the experience of 17 successful operations thinks it most proper to employ nothing of the kind, and accordingly, (unless there should be hemorrhage demanding attention) he does not meddle with the wound after the operation, further than to remove every source of irritation that can be avoided, by keeping the parts clean & removing any coagula of blood that may obstruct the wound —

If hemorrhage takes place from the cut portion of the prostate, from the vessels of the Prostate gland & neck of the bladder, the best application for

arresting it, seems to be one recommended by Dr S.
a circular piece of linen about 6 or 8 inches in
diameter, is perforated in the centre by a pair class-
the catheter - it is then tied around the catheter near
its extremity, when this is introduced into the ure-
tra that the extremity of the catheter may enter the
cavity of the bladder, & serve to draw off the ur-
ine, whilst the linen is in contact with that
part of the wound whence the hemorrhage proceeds
the linen it is evident will be thrown into folds
when the catheter is pushed forward into the bladder,
& these folds should be well stuffed with lint or
some such substance - the compression produced
in this way will be sufficient to arrest the flow
of blood, whilst a free passage for the urine is af-
forded by the catheter -

Having described the several steps
of this operation, I shall in conclusion briefly
allude to some of its advantages. - In the first place
the safety and simplicity of the operation constitute im-
portant recommendations of it, notwithstanding that
some have objected to it on this score, saying that it
is so simple that it requires no anatomical knowledge

on the part of the Operator, but this is certainly a very futile objection and scarcely deserves serious consideration; to make a display of adroitness, & anatomical knowledge when the safety of the patient is in the slightest degree perilled by it, is highly culpable on the part of a Surgeon — The incision which incision being executed with one thrust of the knife, the Parallelism of the wound cannot be destroyed, as is very likely to be the case when it is accomplished by repeated strokes of the knife, the parts at the same time sliding upon each other — and the incision being one smooth simple cut, infiltration of Urine is not so likely to take place as in the other case — Again the wound of the bladder being made small, a fewer number of the numerous blood vessels surrounding it neck will be divided, and consequently there will be less danger of coagula obstructing the internal orifice or any portion of the wound — this circumstance (coagula obstructing the wound) has given rise to the fatal termination of many cases, the Bladder continually provoked by spasmodic contractions, forces out the Urine contained in it, and unless it has a free passage through the wound it will be driven into the cellular tissue in every direction, & give rise to troublesome sinuses — Lastly the incision incises

that has attended this operation in Dr Smith's hands, must not be overlooked. He has now operated on seventeen patients for the stone, & three of various ages from 5 to 75 years, & these patient the Dr States have, without a single exception, recovered, and have not only recovered but have done so immediately and without the occurrence of any of those unpleasant consequences that so frequently follow the operations with the Gorget as performed by most Surgeons of the present day